

**PROPOSED FISCAL YEAR 2006 BUDGET REQUEST  
FOR THE DEPARTMENT OF ENERGY**

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**HEARING**  
BEFORE THE  
**COMMITTEE ON**  
**ENERGY AND NATURAL RESOURCES**  
**UNITED STATES SENATE**  
**ONE HUNDRED NINTH CONGRESS**

FIRST SESSION

TO

RECEIVE TESTIMONY REGARDING THE PRESIDENT'S FISCAL YEAR 2006  
BUDGET FOR THE DEPARTMENT OF ENERGY

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MARCH 3, 2005



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## **PROPOSED FISCAL YEAR 2006 BUDGET REQUEST FOR THE DEPARTMENT OF ENERGY**

**THURSDAY, MARCH 3, 2005**

U.S. SENATE,  
COMMITTEE ON ENERGY AND NATURAL RESOURCES,  
*Washington, DC.*

The committee met, pursuant to notice, at 10:11 a.m. in room SD-366, Dirksen Senate Office Building, Hon. Pete V. Domenici, chairman, presiding.

### **OPENING STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR FROM NEW MEXICO**

The CHAIRMAN. First, let me say I know from the issues that a number of Senators, pointing over here to my good friend from Kentucky, have specific areas of questions, like the whole coal issue. I want to make sure we get to you. So I'm going to try very hard to stay and keep the timing, if you'll help me, Jeff, so Senators will get a chance before we're out of time.

I'm not going to do a lot with my opening statement. I ask that it be made a part of the record, and if there's no objection, it will be.

I want to raise an issue which I am certain Senator Bingaman is going to raise in his opening remarks. There are many, many issues of significance that you have to deal with that are very, very important. I've already told you that I commend you on the way you're taking to this job. I think you have a real opportunity for probably more good public service than you ever expected.

But one of the really important institutions you know about and we know about is Los Alamos National Laboratory. You know what happened in an effort to solve safety and secret-leaking problems, and we had to shut down. I'm now talking about the contract. You expressed quite succinctly, if you change something that's been in existence for 60 years, there's got to be some angst, some anguish.

I think you can't leave this all up to NNSA. I think it's very important that you involve yourself as soon as possible. Some of the things that have been proposed are just very discouraging to me. The University of California had Los Alamos for a long time, and there was a lot that happened in 60 years. But, you know, the paramount thing is it remained a great institution, as you so aptly said. You went there because it has this magnificent history.

Well, they were the managers, right? They were involved. I'm almost of the opinion that these new contract specs are almost calculated to make sure that it's very, very hard for the University of California to get the bid, and I don't really think that's fair.

In particular, this whole notion of setting up a new separate corporation, you're aware of that. I don't know what they attempted to do there, but the employees have a very hard time understanding what that does to them. There are some other issues that perhaps Senator Bingaman will mention that are very, very difficult.

So I'm just asking you today if you will really pay attention to that. You can't afford to have a huge migration of scientists because of a contract bidding process. Now, maybe it won't happen, but you don't want it to happen. We don't want it to happen. So I really urge that you seriously look at this situation. We will have our own discussion with contract bidders on what this RFP means, and that's our prerogative.

So having said that, my other remarks have to do with other issues that I'll take up in questions.

Senator Bingaman.

[The prepared statements of Senators Domenici and Salazar follow:]

PREPARED STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR  
FROM NEW MEXICO

Good morning. I want to welcome Secretary of Energy Samuel Bodman to the Committee this morning in his first official appearance since his confirmation as Secretary. I am pleased you are here to discuss the President's FY 2006 budget request for the programs of the Department of Energy.

I am also pleased to note that the Senate has received the nomination of Clay Sell to be the Deputy Secretary of Energy. I hope to have his confirmation hearing very soon.

I welcome my Ranking Member, Senator Bingaman, and the members of the committee to today's hearing. The Department of Energy has a significant presence in New Mexico, and I know Senator Bingaman and I will both have questions for you, Mr. Secretary.

I must say, Mr. Secretary, that the FY 2006 budget presents a real challenge to this Committee and the Congress. The non-defense, non-homeland security discretionary budget is held about one percent below current funding levels.

The President's request of \$24.3 billion for the Department of Energy represents a two percent reduction—about \$475 million—below the current level. As the Congress continues its work to develop a comprehensive national energy policy, the Administration's budget proposals for DOE will require some careful consideration.

In his State of the Union address, President Bush singled out nuclear power as a safe and clean source of energy and advocated more of it. That is the first time I remember a U.S. President emphasizing nuclear energy in a State of the Union Speech.

I am delighted to see some of the nuclear programs I helped create receive significant support from the Administration this year.

However, for Congress to fund some of the President's priority programs such as nuclear energy R&D, the hydrogen fuel initiative, carbon sequestration, and Nanoscale science, for example, Congress will have to accept some of the President's proposed funding reductions.

Senator Bingaman and I will host a coal conference next week on March 10 to discuss coal and the challenge of developing and using coal in an environmentally-friendly manner to help meet growing U.S. demand for electricity. We are very interested in the President's proposals for DOE coal programs.

I know there will be concern about programs the Administration proposes to terminate, which include the hydropower program, and research on oil and gas technology.

The Administration also proposes significant savings in the environmental management area, which I know our members will want to discuss.

I am particularly concerned that the Administration's budget would reduce funding for the Office of Science by nearly 4 percent.

The Office of Science is the largest source of government support for research in the physical sciences. While we are clearly in a period of budget constraints, I ques-

tion whether the proposed reductions in physical science research activities are in the long-term interest of the United States.

Finally, the Administration proposes significant savings in mandatory programs under this committee's jurisdiction—about \$40 million in FY 2006, but nearly \$3.1 billion over five years. These savings come from a proposal to allow Power Marketing Administrations (PMAs) to charge up to market rates for power. This proposal has already received much discussion by the members of this Committee.

The programs of the Department of Energy affect all our constituents. They are important to the economic and national security of our nation.

I am very pleased to welcome you today, Secretary Bodman. I look forward to working with you on comprehensive national energy policy legislation, and the nuclear weapons issues through the NNSA, which we will not specifically discuss today.

I know we are anxious to hear your testimony and will have questions for you Mr. Secretary. We appreciate your appearance today after your short time on the job.

I would ask you to summarize your testimony in 10 minutes, and ask unanimous consent to place your full written statement in the record.

I would ask my colleagues to keep any opening comments brief so we can get to the questions and answers portion of the hearing.

I would now ask my good friend and Ranking Member, Senator Bingaman, to make any opening statement he might wish. Then I will rotate back and forth to members based upon the order in which they arrived today.

Thank you. Senator Bingaman, please proceed.

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PREPARED STATEMENT OF HON. KEN SALAZAR, U.S. SENATOR FROM COLORADO

Thank you Mr. Chairman, and good morning to you and the members of the committee. I'd like to welcome Energy Secretary Bodman. It is good to see you again, Mr. Secretary. I look forward to our conversation this morning.

The Department of Energy is responsible for a very large number of programs. Their reach extends from nuclear weapons research and nuclear waste disposal to power marketing administration and renewable energy. Even if this hearing were to last all day—and I hope that won't be the case—we would barely scratch the surface of the Energy budget.

With this in mind, I will be focusing only on a few issues, ones that I feel are important to Colorado and to the United States. Specifically, I will be asking questions that target our country's path forward to energy independence.

As you are well aware, Mr. Secretary, the National Renewable Energy Laboratory in Colorado is important not only to Colorado but to the whole country. Research in laboratories like NREL will drive our future energy strategy. While you have only been on the job for a short while, I would like to take this chance to commend you for your personal dedication to funding that laboratory and the work that goes on there.

Mr. Secretary, I am sure we are both in agreement that if the United States could meet its energy demands without relying on foreign oil, the benefits would be enormous. For starters, we would significantly reduce the trade deficit, since money used to purchase fuel stocks would stay within our borders. Domestically produced energy would create more American jobs. In fact, the Union of Concerned Scientists has recently released a report stating that if only 10% of our energy demands came from renewable sources, this would create 91,000 new jobs and would save industrial, business, and home energy consumers \$28.1 billion dollars. From a national security standpoint, reduced demand for oil from the Middle East would significantly diminish the power of oppressive regimes in that region. And since America will not be able to achieve energy independence without a significant contribution from renewable sources like biomass or wind power, the environment would benefit substantially as well.

Given the tremendous benefits our nation would reap on a path towards energy independence, I can not understand why the value of renewable energy is repeatedly sold short by this administration. I am very concerned about the economic models used by DOE to determine the costs of instituting a renewable portfolio standard, because I believe those costs are being grossly misrepresented.

Mr. Secretary, in the DOE economic models, your estimates are based on numbers that simply do not hold up to inspection. The DOE budget request, volume 3, page 26, states that the estimated benefits due to the projected Energy Efficiency and Renewable Energy portfolio are based on the Energy Information Administration's (EIA's) Annual Energy Outlook 2004 Reference Case. By this model, the price of a

barrel of oil in 2003 dollars is \$35 in 2004, drops to \$25 by 2010, and then slowly rises to \$30 dollars in 2025. These forecast prices would be laughable if the repercussions for our nation's future were not so serious. The average price for a barrel of oil was approximately \$41 in 2004, and prices are above \$50 per barrel even as we speak. Some economists now speculate there may be a new floor for oil prices at \$40 per barrel. Similarly, the EIA model for natural gas prices is also too low to be credible. Our nation deserves an analysis based on a realistic economic model and I will be asking you to provide me with that analysis.

The reason the economic model is so important to me—and so important to the country—is that a wrong model can cause the nation's energy priorities to be misplaced. A wrong model can be used to support incorrect decisions, allowing the President to cut programs that need more funding, and allowing him to continue to fund programs that should be cut. I believe that the economic model being used by your agency needs to be put through the wringer, so to speak, in order that this committee and the American public can get a better sense of the advantages that renewable energy sources will provide.

Mr. Secretary, I would like to thank you in advance for your candor in answering this committee's questions here today.

#### **STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO**

Senator BINGAMAN. Thank you very much, Mr. Chairman. First, I welcome the Secretary and I appreciate his visit to our State last week, and I know it was very well received at both of our national laboratories in particular. There are very serious concerns about various parts of the budget, and I'll raise those in questions.

Let me just underscore the issue that Senator Domenici raised; that is, this contract competition process that's been put in place there at Los Alamos. The way the process is now structured, as I understand it, it is designed to essentially ensure that whoever wins the contract, the employees at Los Alamos can no longer continue to be employed with the University of California and can no longer continue to receive the benefits that they have been entitled to under the University of California pension system.

There's been a decision made within the Department of Energy to essentially require that any bidding be done by a separate corporation, and that there be a stand-alone pension system put in place for that location, a site-specific pension system.

To my mind, this sort of undercuts the overall purpose of the contracting idea in the first place. The whole idea behind having a competition, as I understood it, was this was seen as a way to strengthen the laboratory, to make it more of a contributor to our national security. I'm concerned that the effect of this competition is to destabilize the laboratory, and it is to cause many of the most talented people there to look seriously at moving to some other location or some other employer, and that would be very unfortunate, as I see it.

This is an issue that requires attention by you if anything's going to change. I think it's well on its way, and you're obviously fairly new to your position. But I think it would be a shame to just see it play out the way it now appears to be playing out, because it seems to me that if it does play out the way it's slated to play out, it's going to have very adverse consequences for the laboratory.

So I raise that and I look forward to any comments you have on it, or any chance we have in the future to visit on it, and any opportunity you see for any of us here in Congress to be helpful in

this process, because, as I say, I'm seriously worried about the impact of the competition process on this laboratory.

Thank you very much, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Bingaman.

Now we're going to proceed and have the Secretary give his statement. Thank you for coming, and would you abbreviate as much as you can? Your statement will be made a part of the record, and I thank you again.

**STATEMENT OF HON. SAMUEL A. BODMAN, SECRETARY,  
DEPARTMENT OF ENERGY**

Secretary BODMAN. Thank you, Mr. Chairman. It's a privilege to be here. I have a brief statement, and then I would like to make a comment on both your remarks as well as Senator Bingaman's. I'm very pleased to be here and I thank the committee for offering me this opportunity.

On February 2, the President in his State of the Union address underscored the need to restrain spending in order to sustain our economic prosperity. This has been much in the news since that time. Of the more than 150 reductions, reforms, and terminations in the non-defense discretionary programs in the President's 2006 budget, six are DOE programs.

These include the termination of the nuclear energy plant optimization program; the nuclear energy research initiative; hydropower and oil and gas research and development programs; reduced spending for environmental management; and a reform of the power marketing administration electrical rates.

All are topics that I've had conversations with this committee about in the past. I look forward to working with the committee in order to achieve the savings that are described in these proposals.

At \$23.4 billion, the Department's 2006 budget is \$475 million below the 2005 appropriation, and it therefore will contribute to the President's goal of reducing our deficit. Overall, it's a 2-percent reduction from 2005. About \$8.3 billion of the 2006 request is for energy, science, and other programs within the jurisdiction of this committee.

Over the past 4 years, improvements in the management of the Department through the President's management agenda increased our ability to deliver tangible results through our various programs. An example is reducing the high volume cost of automotive fuel cells from \$275 per kilowatt in 2002 down to the approximately \$200 per kilowatt in 2004, using the processes developed in partnership with the national labs. This number has got to get to \$50 a kilowatt in order to have something that's commercially viable, but we're starting to move into that range.

We've also made progress in our efforts to ensure that the nuclear power remains part of the Nation's fuel mix. In 2006, we propose to accelerate efforts to promote near-term construction of new nuclear power plant designs in the United States. We're also working internationally to develop advanced nuclear technologies to take us to the next level in terms of efficiency, reliability, and security.

The long-term viability of nuclear power requires environmentally sound management of high-level radioactive waste and

spent nuclear fuel generated from nuclear power plants. Therefore, the Department in the last 2 years has transformed the focus of our civilian radioactive waste management program from scientific research to construction of a permanent nuclear waste repository.

In addition to nuclear research, we're focusing resources on other new technologies to meet future energy and environmental challenges. These are investments in transformative technologies that will change the way we use and produce energy.

We're pursuing a path toward a hydrogen economy with affordable zero emissions fuel cell vehicles, abundant sources of production, and the safe storage and transportation of hydrogen fuel. The Department is developing carbon sequestration, which when used in conjunction with advanced power production technologies, could help reduce the environmental impact of coal-fired power generation.

We're also contributing to the effort known as ITER, or the International Thermonuclear Experimental Reactor. This is an international effort to pursue the promise of clean, safe, renewable, and commercially available fusion energy by the middle of this century, very long term, but it's one of these things that's so good we can't, in my judgment, afford not to be a participant.

The strong investment that the Department continues to make in advanced, cutting-edge science enables us to explore the possibilities of fusion and hydrogen to add strong options to the Nation's energy portfolio. The DOE budget request charts a focused course of investment for the Nation's future. I feel both excited and personally privileged to have the opportunity of leading this Department to fulfill the vision that the President has laid out for the year 2006 and beyond.

If I may, Mr. Chairman, before concluding, I would just give you the commitment that I will certainly involve myself in the Los Alamos pension question that both you and Senator Bingaman have asked about. I have already spoken at length to the director of NNSA about this, and I am due to meet—I think it's next week, but soon—in an appropriate way with the chairman of the board that will be doing the selection, to talk about the RFP.

I can tell you, Senator Bingaman, that the goal of the RFP was to try to level the playing field, and not to try to exclude anyone. So the reasons for the various features in the proposal were not to exclude anyone, but to include anyone. That was the goal, and to the extent that sometimes when one designs these things, you can have unintended consequences, to the extent that that's what has occurred here, you have my commitment, sir, that I will certainly look into it and do my best to see to it that we have a fair process.

Mr. Chairman, that concludes my remarks.

[The prepared statement of Secretary Bodman follows:]

PREPARED STATEMENT OF HON. SAMUEL W. BODMAN, SECRETARY,  
DEPARTMENT OF ENERGY

Good Morning, Mr. Chairman and Members of the Committee. I am pleased to appear before you today to discuss the President's FY 2006 budget request for the Department of Energy (DOE).

Before I address the highlights of our FY 2006 budget request I want to take us back to the President's February 2nd State of the Union Address. In his address to the nation the President underscored the need to restrain spending in order to sustain our economic prosperity. It is important that total discretionary and non-

security spending be held to the levels proposed in the FY 2006 Budget to achieve the President's goal to cut the budget deficit in half by 2009. Overall, the FY 2006 Budget includes more than 150 reductions, reforms, and terminations in non-defense discretionary programs, of which six are DOE programs. These include termination of Nuclear Energy Plant Optimization, Nuclear Energy Research Initiative, Hydropower and Oil and Gas research and development programs; reduced funding for Environmental Management; and reform of the Power Marketing Administrations' electricity rates. We look forward to working with you to achieve these savings.

At \$23.4 billion the Department's FY 2006 budget is \$475 million below the FY 2005 appropriation contributing to the President's deficit reduction goal. Overall, this is a two percent reduction from FY 2005—savings that reflect DOE's commitment to improved management, streamlined operations and results-driven performance. In the past four years, the Department has excelled to rank among the top Federal agencies in meeting the challenges of the President's Management Agenda. Funding decisions in the FY 2006 budget were driven by performance and measures of program effectiveness to achieve the goals set forth in the Department's Strategic Plan consistent with the goals of the President's Management Agenda. Owing in part to the successful implementation of these management initiatives, this budget is an investment formulated to deliver results in its four strategic mission areas: Defense, Energy, Science and the Environment.

Over the past four years, improvements in the management of the Department increase our ability to deliver tangible results throughout our various programs. An example is the progress made to reduce the high-volume cost of automotive fuel cells from \$275 per kilowatt in 2002 to \$200 per kilowatt in 2004, using innovative processes developed in partnership with the national laboratories and fuel cell developers toward a goal of \$50 per kilowatt.

The Department has also made progress in its effort to ensure that nuclear power remains part of the nation's fuel mix. We have sharpened efforts to develop advanced nuclear energy technologies by focusing on the fundamental research and development challenges necessary to establish the viability of advanced nuclear energy technologies. This includes the development of advanced fuel cycle technologies to significantly improve fuel performance, energy utilization, and proliferation resistance for nuclear reactors. In FY 2006, we propose to accelerate efforts to promote near-term construction of new nuclear power plant designs in the United States. We are also working internationally to develop advanced nuclear technologies to take us to the next level in terms of efficiency, reliability, and security.

The long-term viability of nuclear power requires environmentally sound management of high-level radioactive waste and spent nuclear fuel generated from nuclear power plants. Therefore, in parallel with our efforts to expand nuclear power generation, the Department in the last two years has successfully transformed the focus of our Civilian Radioactive Waste Management Program from scientific research to construction of a permanent nuclear waste repository. The transition was the result of the 2002 recommendation by the President and approval by Congress to designate Yucca Mountain, Nevada, as the site for the nation's permanent nuclear waste repository.

In addition to advanced nuclear research, we are focusing our resources on other new technologies to meet future energy and environmental challenges. These are investments in transformative technologies that will change the way we use and produce energy. We are pursuing a path toward a "hydrogen economy"—with affordable zero emissions fuel cell vehicles, abundant sources of production, and the safe storage and transportation of hydrogen.

The Department is developing carbon sequestration which, when used in conjunction with advanced power production technologies, could help ensure that this country's 250-year-coal reserves can be used with dramatic reductions in emissions of air pollutants. Further, we are contributing to the international effort, known as the International Thermonuclear Experimental Reactor (ITER), as the next step toward producing clean, safe, renewable, and commercially available fusion energy near the middle of this century. The strong investment the Department continues to make to advance cutting-edge science has enabled us to explore the possibilities of fusion and exploit the potential of hydrogen to add strong options to the nation's energy portfolio.

#### THE FY 2006 BUDGET REQUEST

The Department's FY 2006 budget totals \$23.4 billion, of which \$8.3 billion is for energy, science and all other programs within the jurisdiction of this Committee. Knowing the Committee's strong interest in all of the Department's programs, I

would first like to address the overall priorities used to formulate the FY 2006 budget.

The FY 2006 budget proposal that was submitted to Congress is a balanced and responsible portfolio of important investments for U.S. national and energy security that:

- *Meets the requirements of the Nuclear Posture Review*—The budget includes \$6.6 billion for weapons activities, a 0.7 percent increase above the FY 2005 appropriation. The request supports scheduled research and development, maintenance and evaluation, and certification for the nuclear weapons stockpile as supported by the Nuclear Posture Review. I am pleased to report that for eight consecutive years, the Secretaries of Defense and Energy have reported to the President that the nuclear weapons stockpile remains safe, secure and reliable. I will join the Secretary of Defense soon in my first assessment of the state of our nuclear stockpile.
- *Proposes an aggressive nuclear nonproliferation agenda*—The FY 2006 budget includes \$1.6 billion for defense nuclear nonproliferation activities, a 15 percent increase above the FY 2005 appropriation. Projects include shutting down two plutonium reactors in Seversk, Russia by 2008, completing security upgrades in Russia by 2008, expanding the Megaports program, and expanding research and development to improve materials detection. All these efforts are directly related to homeland protection. This increase demonstrates the President's commitment to prevent, contain, and roll back the proliferation of nuclear weapons-usable materials, technology, and know-how.
- *Secures and safeguards nuclear materials*—The budget includes \$1.4 billion for safeguards and security activities to ensure protection for all nuclear weapons facilities, scientific laboratories and facilities, and nuclear waste material at our environmental cleanup sites.
- *Continues progress on the Yucca Mountain nuclear waste repository*—The budget provides \$651 million to support the completion of the application process that precedes issuance of construction authorization for the Yucca Mountain project.
- *Maintains the accelerated environmental cleanup program*—The FY 2006 budget proposes \$6.5 billion within the Environment Management program to continue to meet the accelerated schedule for cleanup of contaminated sites left behind by Cold War-era nuclear development. The Department has cleaned up 76 of the 107 sites to date. By the end of FY 2006, a number of additional sites will close including Rocky Flats, CO, and Fernald and Mound in Ohio.
- *Sustains important scientific investments*—The budget includes \$3.5 billion for Science activities, including continued operation of DOE's scientific facilities, completion of the construction of the most intense pulsed neutron beams in the world known as the Spallation Neutron Source, support for scientific supercomputing, nanoscale research centers, and basic research in genomics and hydrogen.
- *Capitalizes on emerging opportunities in nuclear, fossil and renewable energy and energy efficiency*—The budget includes \$2.6 billion for energy resource programs to enable a reliable, secure and affordable supply of energy for our Nation's growing economy, while doing so in an environmentally responsible way.

#### SAFEGUARDS AND SECURITY THROUGHOUT THE DEPARTMENT

Securing our Nation's nuclear weapons, weapons-usable materials, information, and infrastructure from harm, theft or compromise and safeguarding complex wide DOE workers is one of the Department's highest funding priorities. That job has an impact on every program in the Department of Energy, and it has become more difficult and costly as a result of the increased post-9/11 threat to nuclear warheads and associated fissile materials.

The FY 2006 budget request ensures implementation of the 2003 Design Basis Threat (DBT) requirements and postures the Department to respond to the emerging specificity of the 2004 DBT requirements. The 2004 DBT, approved in October 2004, established the high-level safeguards and security requirements from which the security scope of each specific DOE site is being finalized. As we implement 2003 DBT requirements by the end of FY 2006, we will ensure that the specific actions are consistent with the 2004 DBT requirements so we can meet our goal to implement the 2004 DBT by FY 2008. Funds in FY 2006 will be used, among other things, to upgrade protective forces weapons, training and equipment; fortify storage structures to withstand explosive impacts; improve earlier detection and assessment of intrusion; consolidate nuclear material; and install additional delay mechanisms and barriers around critical facilities in order to protect our facilities against an

evolving threat. Let me be clear, we will do what needs to be done to sustain our protective force readiness and our ability to secure the complex.

#### ENERGY PROGRAMS

The Department's \$2.6 billion request for energy resource programs features investments focused on making current forms of energy more reliable, secure, efficient, and environmentally friendly; and develops long-term energy solutions to help reduce America's dependence on foreign energy sources. The Department's FY 2006 energy resources budget maintains the priorities established in the President's National Energy Policy. The budget continues initiatives in hydrogen use and production, electricity reliability, and advanced coal and nuclear power technologies. Investments in these pivotal areas honor a commitment to strengthen the Nation's energy security for the near-term and for generations to come.

As part of the President's FY 2006 Budget, the Administration proposes several tax incentives to spur the use of clean renewable energy and energy-efficient technologies. Consistent with the President's National Energy Policy, the tax incentives include credits for the purchase of hybrid and fuel-cell vehicles, residential solar heating systems, energy produced from landfill gas, electricity produced from alternative energy sources such as wind and biomass, and combined heat and power systems.

I join President Bush in calling on Congress to pass energy legislation. While many of the initiatives in the National Energy Policy have been implemented, legislation is needed to modernize and improve our electricity grid, reduce our reliance on foreign sources of energy, increase conservation, improve energy efficiency, and expand the use of new technologies and renewable energy sources.

Throughout DOE's energy and science programs is an emphasis on hydrogen-related research and development. The FY 2006 DOE budget request includes \$257 million to continue the five-year \$1.2 billion Hydrogen Fuel Initiative announced by the President in February 2003. Hydrogen is an attractive energy choice for the future because it can be produced from domestic sources and would produce virtually no pollution or greenhouse gases. Spearheading the President's Hydrogen Fuel Initiative is the Department's Office of Energy Efficiency and Renewable Energy. In FY 2006, funding for DOE hydrogen activities is requested for high-risk, high-payoff basic research in technologies to produce, store, and distribute hydrogen for use in fuel cell vehicles, electricity generation, and other applications. The FY 2006 budget request for DOE's Hydrogen Fuel Initiative activities includes the following four program areas:

- Energy Efficiency and Renewable Energy, \$183 million;
- Nuclear Energy, \$20 million;
- Fossil Energy, \$22 million; and
- Science, \$33 million

The FY 2006 budget request will support the acceleration of hydrogen development in production and delivery research and development and systems analysis with the goal of meeting the 2010 technical targets identified in the DOE Hydrogen Posture Plan and Multi-year Research, Development and Demonstration Plan. This lays out the Department's plan for successfully integrating and implementing technology research, development, and demonstration activities needed to cost-effectively produce, store, and distribute hydrogen for use in fuel cell vehicles and electricity generation.

#### ENERGY EFFICIENCY AND RENEWABLE ENERGY

The request for the Department's Energy Efficiency and Renewable Energy programs is \$1.2 billion. In addition to increases for hydrogen technologies, the \$354 million renewable energy budget emphasizes development of low-wind speed technologies, advancements in solar energy including concentrating solar power systems, and geothermal technology development. Research in hydropower technology has advanced and can now be adopted by industry. Therefore, the budget proposes to eliminate the Hydropower Program in FY 2006 and transfer the results of program research, development and demonstration to industry.

The budget proposes \$847 million for energy efficiency activities including fuel cell activities that support the President's Hydrogen Fuel Initiative and FreedomCAR, and efficiency of buildings to include lighting, windows and space conditioning research and development. The FY 2006 budget request proposes to decrease efforts aimed at energy-intensive industries and focus instead on the successful completion of existing projects with the highest potential future energy efficiency and environmental benefits. New projects will be selected based on their potential to signifi-

cantly reduce energy intensity and must demonstrate that they would otherwise not be undertaken without federal research and development support.

The budget continues its strong commitment to assist low-income citizens through the Weatherization Assistance program. Since 2001, the Weatherization Assistance Program has helped 117,000 more low-income families than would have otherwise received assistance. In the FY 2006 budget request, \$230 million is requested to weatherize more than 92,000 homes in 2006 and leverage resources from other state, local and private sector entities sufficient to weatherize approximately 100,000 additional homes. This method of implementing conservation through proven energy savings measures helps reduce reliance on energy imports.

#### NUCLEAR ENERGY, SCIENCE AND TECHNOLOGY

The FY 2006 budget request includes \$511 million for nuclear energy programs to expand the development of advanced nuclear energy technology. Nuclear power, which generates 20 percent of the electricity in the United States, is a significant component of a balanced, clean energy portfolio. It is relatively inexpensive, safe, and versatile and contributes to reducing the nation's reliance on foreign energy.

The Department has intensified its efforts to develop advanced nuclear energy technologies by addressing the fundamental research and development needed to establish a viable advanced nuclear energy system. The FY 2006 budget requests \$45 million for the Generation IV Nuclear Energy Systems Initiative to expand research and development and cooperation with our international partners to develop next-generation reactor and fuel cycle systems that are a significant leap in economic performance, safety, and proliferation-resistance.

The FY 2006 budget request will also bring us closer to the reality of constructing the next generation of nuclear power plants in the United States. With a request of \$56 million, the Nuclear Power 2010 program will be able to complete early site permit (ESP) demonstration projects, focus on documenting and recommending future ESP applicants, and prepare guidance for the construction, operation and license application. This will help enhance U.S. energy supply diversity and energy security.

The Advanced Fuel Cycle Initiative, with a request of \$70 million, will complement the mission of the Nuclear Nonproliferation program through the development of new technologies that significantly reduce accumulated plutonium in civilian spent fuel, thus reducing the threat of nuclear proliferation. Moreover, this technology can be deployed to support the operation of current nuclear power plants to achieve a significant reduction in the amount of high-level radioactive waste requiring geologic disposal.

#### FOSSIL ENERGY

The FY 2006 budget request includes \$491 million for fossil energy research and development activities. Within this request is \$351 million for Coal and Other Power Systems research reflecting the importance of domestic coal resources to the nation's energy future. America has a 250-year supply of coal that fuels more than half of our domestic electricity generation. Just as coal helped make America the world's foremost industrial power over the past two centuries, it will continue to be an important part of our national economy in the 21st century and beyond. The key is technology. Within the coal request is \$68 million for the Clean Coal Power Initiative (CCPI), a key component of the National Energy Policy. The CCPI is a cooperative, cost-shared program between government and industry to rapidly demonstrate emerging technologies in coal-based power generation and to accelerate their commercialization. The FutureGen project, which is part of the CCPI, will establish the capability and feasibility of co-producing electricity and hydrogen from coal with essentially zero emissions. A critical component of the FutureGen project will be the demonstration of technologies that sequester carbon emissions associated with coal power generation.

The FY 2006 budget request includes \$18 million for FutureGen but also proposes an advance appropriation of \$257 million from prior year clean coal project balances, to be made available in FY 2007, to provide the Federal share of FutureGen for several years. The budget also increases research and development in clean coal technologies that are integral to the FutureGen concept, such as Integrated Gasification Combined Cycle systems, carbon sequestration, and next-generation turbines. Another major aspect of advanced power systems is fuel cell research and development. These activities offer the potential to meet peak electricity demand in a cost-effective manner, without the need for capital-intensive, central station generation capacity or costly investments in transmission and distribution. The Solid-State Electricity Conversion Alliance (SECA) is DOE's major initiative for stationary fuel cell

development. The goal is to create a solid oxide fuel cell (3-10 kilowatt) that can be mass-produced in modular form at relatively low cost.

The Sequestration Research and Development program is part of the President's Climate Change Technology Program, where \$67 million is being requested in the FY 2006 budget. The \$22 million funding increase above the FY 2005 appropriation will ensure that the program will be able to test sequestration technologies and infrastructure concepts needed to successfully deploy these technologies in the most important U.S. regions. The FY 2006 budget request will also sustain core research and development needed for successful carbon capture, storage and monitoring. The most promising approaches will be tested at larger scale.

The FY 2006 budget request includes \$20 million for the cost of orderly termination of the Oil and Gas technology programs. The decision to terminate these programs reflects a strategic assessment of the programs' technical effectiveness, as measured by the Program Assessment and Rating Tool (PART), compared to other fossil energy programs that are more efficient and technically viable. This is in line with our commitment to deliver results for the American taxpayer. The focus in FY 2006 will be to conduct the orderly termination of these programs and I look forward to achieving this efficiency for the taxpayers. Funding requested in the FY 2006 budget will be used to fulfill legal obligations incurred in the termination process.

In addition to Fossil Energy Research and Development, the Fossil Energy program request includes \$166 million to continue storage site maintenance, operations, security and drawdown readiness activities of the Strategic Petroleum Reserve (SPR). The inventory of the SPR will reach 700 million barrels by mid-calendar year 2005. An inventory of 700 million barrels will provide the equivalent of 58 days of net import protection. In FY 2006, the continued operation and readiness of the Northeast Home Heating Oil Reserve will be sustained using carryover balances available from prior years. The budget requests \$19 million for Naval Petroleum and Oil Shale Reserves (NPR) to provide for operation and maintenance of NPR-2 in California and NPR-3 in Wyoming, and closeout activities relating to NPR-1 in California. The Elk Hills School Lands Fund payment to the State of California continues with a request of new budget authority of \$48 million, in addition to an advance appropriation of \$36 million included in the FY 2005 Interior Appropriations Act.

#### ELECTRICITY AND ENERGY ASSURANCE

The need to modernize our country's aging electric infrastructure is paramount to our national and energy security. This was underscored by the East Coast and Midwest blackout of August 2003 which left millions of Americans in the dark and cost the Nation billions of dollars. The FY 2006 budget request seeks \$96 million for national efforts to modernize and expand our electric delivery system, and ensure reliable, robust electricity transmission.

Also within the request is \$45 million for High Temperature Superconductivity research and development to bring the tremendous efficiency and capacity advantages of superconductive materials to electric power transmission applications. Funding of \$6 million is requested for GridWise research and development activities to modernize the Nation's electric infrastructure by upgrading software to employ real time controls at the local level. In addition, \$5 million is requested for GridWorks research and development activities to integrate advanced hardware technologies into platform systems necessary for control, communication and information sharing.

#### POWER MARKETING ADMINISTRATIONS

The Administration makes several proposals associated with this budget to improve the performance of the Power Marketing Administrations (PMA) by removing unnecessary government intervention and allowing the PMAs to operate in a more business-like efficient manner.

The FY 2006 budget request proposes to reclassify receipts that are currently deposited to the Treasury and are collected based on appropriations for PMA expenses. The budget proposes that these receipts directly offset appropriations requested for the program direction and operation and maintenance activities of the Southeastern, Southwestern, and Western Area Power Administrations. This change will allow the PMAs to operate on a more business-like and efficient manner.

In addition, the budget proposes to reclassify receipts to directly fund the hydropower portions of the Corps of Engineers (Corps) and Bureau of Reclamation (BuRec) operations and maintenance expenses. Currently the PMAs collect receipts based on appropriations to the Corps and BuRec for these activities. Directly funded activities will include short-lived capital investments typically considered maintenance.

nance. Direct funding will enable the Corps and BuRec to perform needed maintenance and small rehabilitation projects in a more timely manner. The Administration proposes the direct financing of BuRec's hydropower research and development activities by Bonneville and Western, the primary beneficiaries of the program.

The Administration proposes to very gradually bring PMA electricity rates closer to average market rates throughout the country. This will accelerate recovery of taxpayer subsidies and repayment of PMA debt owed to Treasury, while creating a more level playing field for the wholesale power market. In addition, we propose to clarify the liabilities that count toward the Bonneville Power Administration's statutory cap on borrowing so that all debt-like transactions count, which will restore meaning to the debt cap. The Budget proposes to increase BPA's debt ceiling by \$200 million in 2009, which exceeds BPA's estimate of the additional transactions that would count toward its cap."

#### SCIENCE

The \$3.5 billion FY 2006 budget request for Science programs continues important research activities, completes construction of the Spallation Neutron Source, and increases support for best performing activities that can provide the broadest benefits to society. When combined with the significant science expenditures throughout the complex, the Department of Energy is the largest federal supporter of the physical sciences. The FY 2006 budget request is a strong investment that will help enable us to maintain America's leadership position in the world scientific community.

The FY 2006 budget request of \$1.4 billion for the Basic Energy Sciences (BES) program is a \$41 million increase above the FY 2005 appropriation. The request includes \$43 million for the operation of four nanoscale science research centers located at Oak Ridge, Argonne, Lawrence Berkeley, and Sandia/Los Alamos National Laboratories. These centers are designed to promote rapid advances in the promising areas of nanoscale science and are part of the DOE contribution to the Administration's Nanotechnology Initiative.

The request for Basic Energy Sciences includes \$42 million to complete construction of the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory and \$107 million to begin operation of the facility in FY 2006. The SNS will provide the most intense pulsed neutron beams in the world for scientific research and industrial development. Neutron-scattering research used for example to research the structure of materials, on the scale of the SNS holds enormous potential for improving our quality of life such as making stronger, lighter plastic products. This type of research has already been applied to make improvements on jets; credit cards; pocket calculators; compact discs, computer disks, and magnetic recording tapes; shatter-proof windshields; adjustable seats; and satellite weather information for forecasts.

The Basic Energy Sciences program also includes \$33 million in FY 2006 for a portion of the President's Hydrogen Fuel Initiative. This basic research program investigates the potential of a hydrogen economy and is based on detailed findings and research directions identified by the scientific community and DOE applied programs. All research awards are based on the results of peer reviews that assess past performance and the quality of the hydrogen research and development proposals.

The FY 2006 budget request proposes to support Nuclear Physics activities at \$371 million which continues research and operation of facilities at the Thomas Jefferson National Accelerator Facility in Newport News, VA, and the Relativistic Heavy Ion Collider at Brookhaven National Laboratory, NY.

High Energy Physics activities continue with a \$714 million budget request in FY 2006. Funding will support the facilities at Fermilab, IL, \$304 million, and the Stanford Linear Accelerator Center (SLAC), CA, \$144 million. Both facilities will operate at an increased rate, affording scientific users a combined total of 9,760 hours of operation or a 26.8% increase from FY 2005.

The FY 2006 budget requests \$207 million for Advanced Scientific Computing Research (ASCR) to continue U.S. leadership in high performance supercomputing, networking and software development. The FY 2006 budget request initiates a new activity to allow Scientific Discovery Through Advanced Computing (SciDAC) teams to evaluate new computer architectures as tools for science. In addition, the budget will support two competitively selected SciDAC institutes at universities that can become high-end computing centers of excellence.

The FY 2006 budget request includes \$456 million for Biological and Environmental Research to continue fundamental, innovative, peer-reviewed research leading to discoveries in the Life Sciences, Climate Change Research, Environmental Remediation, and Medical Applications and Measurement Science. In FY 2006, a

\$20 million increase is provided for genomics research for imaging and characterization of complex microbial communities for energy and environmental applications.

The budget request includes \$291 million for Fusion Energy programs, which seek to study plasmas, the fourth state of matter, and understand and control the process of fusion that can produce an enormous release of energy. The budget request includes \$46 million to begin U.S. contributions to the \$5 billion cost shared International Thermonuclear Experimental Reactor (ITER), an international burning plasma experiment that may ultimately lead to a fusion power plant. When the President announced that the United States would participate in the project, he noted that "the results of ITER will advance the effort to produce clean, safe, renewable, and commercially available fusion energy by the middle of this century." The FY 2006 budget request for ITER assumes that international partners reach a timely site decision and would be used to fund the first year of equipment fabrication for the United States' in-kind contributions to this important partnership.

The FY 2006 budget request also reflects participation by the Office of Science in multi-year budget planning. Expanding the budget horizon to a five-year profile enables the Office of Science to evaluate its programs, activities, and progress toward meeting both near and mid-term goals in a multi-year context, assures budgeting discipline and allows for a broader, larger scale to long-term planning.

#### ENVIRONMENTAL MANAGEMENT

The Administration's commitment to the environment includes taking action to address the environmental legacy of our past work, particularly building the nuclear weapons complex that helped win the Cold War.

In 2002, DOE took an aggressive approach to transform the Environmental Management program from managing risk to one of reducing and eliminating risk to human health and the environment. The Department reassessed its cleanup strategies and methods and announced an accelerated cleanup strategy.

The total FY 2006 budget request for Environmental Management programs is \$6.5 billion. As cleanup is completed at sites such as Rocky Flats, Fernald and Mound, it makes sense that the Environmental Management budget will decline. The FY 2006 budget request is \$548 million lower than the FY 2005 adjusted appropriation of \$7.1 billion.

The total FY 2006 Environmental Management budget request includes \$941 million for the non-defense Environmental Management and Uranium Enrichment Decontamination and Decommissioning activities within the jurisdiction of this Committee. Included in the budget request are design and construction activities for a Depleted Uranium Hexafluoride (DUF6) Facility at both the Portsmouth, OH, and Paducah, KY, sites.

The Office of Environmental Management has included five-year budget plans in the FY 2006 Budget. These plans will provide budgetary rigor and an out-year context to programmatic decisions, and along with the Office of Science five year plans, will serve as a model for the rest of the DOE programs, which will develop five year budget plans for the FY 2007 budget submission. This effort assures budgeting discipline and allows for a broader, larger scale to long-term planning.

#### CIVILIAN RADIOACTIVE WASTE MANAGEMENT

Consistent with the President's National Energy Policy, the Administration's FY 2006 budget request maintains the commitment to develop a permanent nuclear waste repository. The Department is requesting \$651 million to meet the commitment to establish a geologic repository at the Yucca Mountain site in Nevada. The FY 2006 budget request supports the completion of the application process that will lead to the issuance of construction authorization. In preparation for the eventual construction of the repository, the FY 2006 budget request also includes \$85 million to continue to develop and manage the transportation capability required to transport spent nuclear fuel and high level radioactive waste from specified locations to the repository.

#### LEGACY MANAGEMENT

The total request for Legacy Management activities in FY 2006 is \$79 million. The program conducts the long-term stewardship tasks of managing land, structures, facilities, and records, and overseeing the Department's pensions and post retirement benefits for former contractor employees after site closure. The FY 2006 budget reflects an increase of \$3 million, to address higher than estimated requirements for post-retirement life, medical, and long-term disability benefits. The request also includes \$31 million to support working with the closure site contractors to enhance the delivery system for pension and health benefits for closure sites. The

Department considers the role planned for community and worker transition activities to be completed, and no additional funding has been requested.

#### ENVIRONMENT, SAFETY AND HEALTH

The FY 2006 budget request includes \$107 million for Environment, Safety and Health activities to directly support the mission of DOE to ensure that the safety and health of the DOE workforce and members of the public, and the protection of the environment are integrated into all DOE activities. FY 2006 funding will continue to provide for the establishment of DOE policy to ensure safe and secure workspace across the complex and establish and enhance the scientific basis for worker protection policy and standards. The budget includes \$14 million for the Radiation Effects Research Foundation and \$6 million for Marshall Islands activities. The FY 2006 budget request reflects the transfer of Part D Energy Employee Occupational Illness Compensation Act program activities to the Department of Labor. Prior to the transfer to the Department of Labor, DOE was responsible for assisting nuclear weapons workers who worked at DOE facilities that developed work-related illnesses as a result of exposure to radiation and toxic chemicals. In FY 2006, within available funds, DOE will continue to support the Department of Labor's implementation of Part E, which includes the responsibilities transferred from DOE in FY 2005, by conducting record search activities in the field as well as provide site survey data.

#### CONCLUSION

The Department's FY 2006 budget request proposes a series of investments enabling DOE to meet critical Presidential commitments and at the same time reflects prudent fiscal responsibility. The efficiencies identified in this request reflect the return on the Department's efforts in the last four years to strengthen management and accountability for the American taxpayer. This request charts a focused course of investment for the nation's future—one guided by a cohesive mission and targeted performance metrics. I am both excited and privileged to have the opportunity to lead this Department to fulfill the vision the President has laid out for us in FY 2006 and beyond. Mr. Chairman, I also look forward to working with you and the Members of this Committee on how we can best accomplish our mission of providing for national and energy security.

Thank you. This concludes my formal statement. I would be pleased to answer any questions you may have at this time.

The CHAIRMAN. Thank you very much. I want to look at nuclear power for a little bit, because I am very optimistic that there's a significant movement of a positive nature, motivated both by the fact that the world seems to be more interested in nuclear power than ever, China buying 25 reactors and the like, and we're closer and closer to moving forward.

But, Mr. Secretary, I have real concerns about the pattern of delay in the leadership of NP 2010. Now, you know what NP 2010 is, and it's an exciting program to expedite and cut the time for construction and licenses as contrasted with site licensing for nuclear power plants. We happen to be partners with two consortia, Dominion and New Start, which have a very large array of nuclear power plants.

We've made awards to two of these private sector consortia, and these moneys have been 5 months—it's 5 months since it was culminated, and the money hasn't been dispersed. Now, I know you know that you can't leave things like this to the ordinary bureaucracy to nitpick instead of understanding that things have to get done in areas that are very, very important.

If we can't show the same utilities that are doing what they're doing that we're interested, then I think we have little chance of the dream that we're talking about. So I need you to tell us that using your business acumen on getting things done, that you will look at this and see why it's taken so long, which now is not so im-

portant because it's done, but why we can't get it done expeditiously so that we move with the terrific spade work that has already been done to get the consortia together, to get the program together. Can you address that, please?

Secretary BODMAN. Yes, sir. I expect that there will be other questions from other Senators related to the timeliness with which we in the Energy Department accomplish our desired missions and goals. I can't give you the details about this particular issue. I can tell you that I will certainly be happy to look into it, and I will be happy to give you a response.

[The information follows:]

The Department is moving with diligence to issue the Nuclear Power 2010 cooperative agreements and associated FY 2005 funding to the industry. It is our firm desire to keep the momentum on new nuclear plants progressing toward deployment.

The Dominion Energy decision to change its selected reactor technology to the General Electric ESBWR design caused the Department and industry to re-evaluate project cost, cost share, and annual funding in both the Dominion Energy and NuStart projects. This is due in part to the fact that the GE ESBWR reactor design is part of both projects. In addition, NuStart requested additional FY 2005 funds to accelerate the Westinghouse AP-1000 work scope. Both of these conditions required re-submittal of detailed cost information by both reactor vendors to the Department. In addition, intellectual property rights terms and conditions required complex and lengthy negotiation with the reactor vendors. The Department reached agreement on the terms and conditions for the cooperative agreements during the week ending March 11, 2005. The Department expects to issue the cooperative agreement to Dominion Energy by the end of March and to NuStart in April 2005.

Secretary BODMAN. The Department means well. The Department is doing its best in its own way, I believe. There is not a conscious effort to withhold funds or to miss deadlines. But we somehow seem to have that as a part of the fabric of the way we do business, and we're going to attempt to improve that. And so I will make that commitment to you, sir. We will certainly look into it, both generally and specifically.

The CHAIRMAN. Well, again, I'm going to leave the rest of my questions—if I don't get to them, I'll submit them. I'm going to proceed with other Senators.

Senator Bingaman.

Senator BINGAMAN. Thank you very much, Mr. Chairman. Let me ask about the Office of Science budget. In the strategic highlights, which is—this is one of the volumes of the 2006 budget—on page 7 it shows a 5-year estimated projection for the Office of Science, projecting that it'll go from \$3.6 billion this fiscal year to \$3.36 billion 5 years out, or in fiscal year 2010. If you assume 3 percent inflation, the baseline would grow to 4.17. So you could look at how much of a shortfall we are going to have relative to where we are now even.

This concerns me. It seems as though we are essentially laying out a long-term plan for decreasing our investment in science. That seems short-sighted to me, and I'm certain that it does to you too, Mr. Secretary. I don't know how we break out of this circumstance and start to give more priority, particularly to physical sciences, but to all science work in general in this country. But it just strikes me that if you see a long-term decline in the budget of the Office of Science, that's something that ought to concern this committee and ought to concern the Congress generally.

Secretary BODMAN. First of all, I would reiterate what I stated in my opening remarks, sir, that we are in a very, as you're well aware, a very stringent budget environment, and therefore the tough judgments have been made in terms of which parts of the Department's programs would be increased, which part would be decreased.

There were judgments made largely focusing on homeland security, largely focusing on the defense, the war on terror, and the necessity of beefing up our efforts with respect to our nuclear weapons. Hence, most of the increases went there and we had decreases in the balance of our portfolio.

Having said that, sir, I view the responsibilities of the Department of Energy with respect to funding, support for our physical sciences—you mentioned sciences in general—but I would cite, I think you're quite right in singling out the physical sciences. Fortunately, the life sciences have received very positive treatment, both from the Clinton administration as well as from the Bush administration. We've seen sizable increases in the National Institutes of Health and other life science efforts.

I think it has gradually become clear to even those responsible for the life sciences that you can't make the kind of progress you need there without efforts and progress in the physical sciences. So this is a serious matter.

I was not involved in the discussions, you're aware of that, with respect to this budget. I will certainly look at it and try to apply my own judgments as to where we allocate our resources. I can tell you that with respect to the science budget, significant reductions were made in programs that were and are important in the sciences budget, but they were made intelligently, and still will enable us to provide the kind of leadership in the physical sciences that this country has enjoyed in the past.

Senator BINGAMAN. Let me ask about a couple of specifics. One is, oil and gas research and development programs are slated for termination. That seems short-sighted to me. Some of that work is done in our state at New Mexico Tech. It's work that's intended to help independent petroleum producers get maximum production off of wells in this country.

One other, which is a very small item, but it's just one I wish you would pay some attention to and focus on a little, the budget proposes to zero out the U.S.-China Cooperative Program on Fossil Energy, which is a program to promote efficient, clean burning of coal in China.

Now, this is a very, very small program. As I understand it, I was fortunate to be in China last August with seven other Senators, and I was told then that the Department of Energy was going to have an office in China for the first time, which was very encouraging, and that there was a great hope that we could work with the Chinese and assist with encouraging them to do more to move toward clean burning of coal in the great number of power plants, coal-fired power plants that they're bringing online. For us to zero out the funding to support this effort just seems to me extremely short-sighted, and I wish you would look into that. It's a very small item in the budget, but one that I think could have a lot of benefit.

The CHAIRMAN. We'll put it in appropriations.

Secretary BODMAN. If I may make a couple of quick comments on that.

Senator BINGAMAN. Please go right ahead.

Secretary BODMAN. In both cases, the opening remark is the same, you know, we have tough choices to make, and so it's been one trying to decide where we put our money to get the maximum return.

With respect to oil and gas, frankly my understanding is, and I would have to agree with it, that with oil at \$50, the industry is in better financial shape than it has been in many years, and one might respectfully ask the question, does it make sense for the Government to be funding the technical work, even for the independents—I recognize there's a difference between the majors and the independents—and so that was a part of the thinking, I have to believe, in terms of making that judgment that we've got very high energy prices—this is the other side of the coin. There are some advantages to having high prices in that they're doing well and they ought to be able to spend money on research and develop these things themselves.

Second, with respect to the Chinese cooperative program, I have no idea. I'd be happy to look into it. I'm unaware of that, and I'll be happy to find out more about it and get back to you, sir.

[The information follows:]

China is a large market for U.S. Clean Coal Technologies. Bilateral cooperation with China, maintained by the Office of Fossil Energy, is aimed at using the bilateral relationship to minimize the impact on the global environment as China's economy expands, while helping to intensify the engagement of U.S. clean energy technology vendors in the Chinese energy market.

The Office of Fossil Energy maintains technology cooperation with China through the U.S.-China Fossil Energy Protocol, which encourages Chinese use of U.S. Clean Coal Technologies on a government to government basis and the U.S.-China Energy and Environmental Technology Center (EETC). As an example of one activity under this Protocol, the Department hosted a delegation of senior Chinese engineers and provided a one week tutorial (at their request) on U.S. fuel cell technology. The work under this Protocol area is progressing well.

The activity that has been zeroed out is the EETC. The EETC maintains offices at Tulane University in New Orleans and Tsinghua University in Beijing. The EETC is a source of information technology and is a source of information for U.S. industry on planned clean coal projects in China. Approximately one million dollars was appropriated for this Center last year as a congressional earmark.

Senator BINGAMAN. Thank you.

The CHAIRMAN. Senator Alexander. Were you here ahead of him? You didn't put that on here. You all made a mistake. All right, Senator. They have it the other way. That's the only reason I did it. Sorry.

Senator THOMAS. Okay. I'll let it go.

The CHAIRMAN. I've got to be careful here. We're going to have a Wyoming Senator who's going to be mad at me, and it will be the staff's fault.

Senator THOMAS. Well, thank you, Mr. Secretary, for being here and taking on this job. As you know, we have spent and continue to spend a good deal of time with respect to an energy policy. I think most of us agree that an energy policy would include such things as efficiency, as conservation, as renewables, as domestic production. These are basic things that I think we want to be there.

So as I look at it a little bit, energy efficiency research is down some. Coal, which is our best opportunity, our largest fossil fuel resource, to be able to convert that into more of an environmentally sound thing, is much a part of our future.

Renewables, we have in our policy, the funding here seems to be down a little. Clean coal, I mention again, and, you know, we've talked a long time about FutureGen, but nothing seems to be happening. The money's always there, but nothing's happening.

So, in general terms, would you comment a little bit on how consistent this budget is relative to what I think most of us perceive to be the future of energy policy?

Secretary BODMAN. Yes, sir, I'd be happy to. It strikes me that this budget seeks to identify those areas, and exactly those areas, whether it's coal or improved efficiency, whether it's the hydrogen program, whether it's nuclear power, in all of these areas where we think we get the maximum returns. And in some cases looking at the differences between the appropriated level and the budget or the proposed 2006 budget is—does not look hard at what we proposed a year ago.

And so the Congress does its will and moves these numbers around itself, and therefore, in most of these areas, I believe, where we are proposing increases or levels that are at least equivalent to the figures that were proposed a year—

Senator THOMAS [presiding]. Well, actually, oil and gas technology is out, energy efficiency is down, renewables are down—

Secretary BODMAN. With respect—

Senator THOMAS. I don't think what you're saying is consistent with what's in the numbers here.

Secretary BODMAN. Again, I'll be happy to go back and go through each one. Oil and gas, you're correct, sir. There's no doubt about that, and that I can't help but restate what I stated before to the question that Senator Bingaman asked. We have an industry that is at record levels in terms of prices for its products, and does it make sense—

Senator THOMAS. Yes, but the role of the Energy Department in some of those things is a little different than the role of the commercial folks, when we're looking forward in terms of how to do things in the long term a little bit better. So, at any rate, I'd like you to look at that.

Secretary BODMAN. Yes, sir.

Senator THOMAS. Western Power, you know, the PMAs, I see there's a look to turning that into commercial prices. These things, of course, go basically to rural areas through non-profits, and some people are very concerned that that would become just a commercial kind of a thing rather than serving those people that are difficult to reach, so that PMA change is apparently in this budget.

Secretary BODMAN. Well, with respect to the PMAs, I know that's a topic that other Senators also will have questions about. With respect to the PMAs, the proposal is to allow a gradual increase in prices that over a period of time, and reflective of a situation that will not disrupt economic activity, but will start to move us in a direction that we remove the subsidies that are believed to exist for all of the PMAs, from taxpayers who do not benefit from the—from being—

Senator THOMAS. PMAs do offset their costs, however, the way it is currently.

At any rate, I've taken my time, sir.

Secretary BODMAN. All right, sir. Thank you.

Senator THOMAS. But we'll talk about it some more later.

Senator Wyden.

Senator WYDEN. That's the question I want to start with. I mean, your proposal with the PMAs is just economic poison for our region, and we are going to block it. We have the good fortune of having Senator Domenici strongly opposed, along with Senator Craig and many of us on the committee.

But here's my question to you. You have the ultimate approval over the rates of Bonneville and the PMAs, and what I'd like is your assurance that you won't do an end-run on Congress, and in effect go out and administratively put in place this proposal that you have for Bonneville and the powered marketing agencies. Can you give me that assurance this morning that you won't do it administratively?

Secretary BODMAN. Senator, I'm just an engineer, sir, and not a lawyer. And I would tell you—and therefore, having—speaking from that vantage point, I do not believe that I or anybody at the Energy Department has the flexibility of doing an end-run. That's why this is in the budget. It is our view that this would require legislative change if we are to change the way the PMAs do business. That's why it's in there.

It is my understanding—and my belief—I'm basically a business man, sir, and I will see to it that we do business in these authorities according to the law that created them, because that is my responsibility, and I will continue to do that while we have this discussion.

Senator WYDEN. We're going to block you, Mr. Secretary.

Secretary BODMAN. All right, sir.

Senator WYDEN. I'll just give you that up front. And you've told me now that you're not going to pursue it administratively. We think that there are some concerns that you could do it administratively. That's why I'm asking.

Let me turn to high oil prices, because yesterday oil hit \$53 a barrel, and you were quoted as saying you've got no plans to talk to OPEC. Your exact quote was, I'll be speaking in time with representatives of the governments of OPEC.

What's the argument for not being on the phone with them today? People are getting clobbered by these high prices. I hear about it at every town hall meeting. I don't understand why you wouldn't be on the phone with OPEC pressing right now to try to get some relief for our consumers.

Secretary BODMAN. Senator Wyden, the capability of any representative of this government to influence the members of OPEC is limited, and it is something that has been done in the past and will presumably be done in the future, and we will be a part of that. I can't comment on that particular quote, but I will tell you that I do expect to play a role, and to continue to play a role as a part of my responsibilities here. But I will tell you I do not control what OPEC does.

Senator WYDEN. What's the argument for not pressing now? There's no question that you can't just snap your fingers and suddenly make them do things. But what's the argument for not doing it today? I don't understand why there would be any delay. I mean, why not push immediately?

Secretary BODMAN. Senator Wyden, I have a lot of things on my plate. All I can tell you is that I am aware of your views and I will take them into account as I try to make a determination as to how I proceed.

Senator WYDEN. Well, I'm sure you have a lot on your plate, Mr. Secretary, but this ought to be in the front of your plate, because this is what people are concerned about, that if we have these prices continue to escalate, we're going to see great harm for our economy.

The last question I had on my round was about the cuts in clean-up funding at Hanford. There's a concern that Hanford is taking bigger cuts in the clean-up budget than is other areas, and we would like to know what's behind that and what you'd be willing to do about it. In fact, you're proposing to cut overall clean-up funding at Hanford in our area by over 10 percent,\* and it's a larger cut as far as we can tell than the other sites. What would be behind that?

Secretary BODMAN. First of all, sir, Hanford is the largest clean-up effort that we have. It takes a very high priority on my time and on the time of those of us responsible for this Department.

The proposal is in excess of \$1,800,000, so it is not something that we are ignoring. There are three reasons for the decline. The first is that it was discovered by the new contractor that there were incompletions in the seismic information that they had, that based on the original design, so they have slowed the construction progress of the vitrification plant in order to be able to reassess the effect of the new seismic information on the foundations. And so that has caused and will cause a delay in the vit plant construction effort.

Second, we've actually completed certain aspects of the Hanford clean-up, and so that there are some reductions that come about because of that.

And then third, there are issues where we do have a difference of opinion with the State of Washington, with respect to the approach that we are using with respect to the waste incident to the reclamation program that is ongoing, or the so-called WIR Project. And therefore, we have slowed the spending down there in order to try to take on those things where we are in agreement, and then hopefully we will be able to reach agreement with the State over a period of time.

So those are the three reasons that led to the reduction, but it's still \$1,800,000, still a sizable undertaking.

Senator WYDEN. My time is up. It is a bigger cut than the other sites have faced, Mr. Secretary. And I saw in *Engineering News* that you said the huge cuts in Hanford clean-up were justified by saying that the clean-up is winding down.

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\*Senator Wyden amended this figure from 7 to 8 percent to over 10 percent.

But it's hard for us to see how clean-up is winding down when none of the high-level waste from the tanks has been processed, and the vitrification plant necessary to process the waste hasn't even been built. So Senator Cantwell has really led us in this effort, but the people of Oregon care a great deal about it, and I'm going to be asking some additional questions of the Department on this as well.

Thank you, Mr. Chairman.

Senator CRAIG [presiding]. Thank you.

Senator Alexander.

Senator ALEXANDER. Thank you, Mr. Chairman. I'd like for my statement to be a part of the record, my opening statement.

Senator CRAIG. Without objection.

[The prepared statement of Senator Alexander follows:]

PREPARED STATEMENT OF HON. LAMAR ALEXANDER, U.S. SENATOR FROM TENNESSEE

Thank you, Mr. Chairman.

I've mentioned before that we're at a major crossroads in terms of our nation's energy security. If we continue down the current path, we will continue to depend on foreign sources of energy, prices will continue to rise, and our environment will continue to be polluted. We can choose another path.

Unlike some other issues we deal with here in Washington, there are some relatively clear solutions to our energy problems—solutions driven by advances in science and technology, American ingenuity, and a healthy dose of common sense.

DOE has a critical role to play in all three of these areas. Its FY06 budget funds many of the programs that move us towards new clean energy technologies that also improve our economic competitiveness. I am encouraged by the fact that the FY06 budget request increases funding for nuclear energy and some aspects of clean coal R&D, both of which are focused on helping us reduce air pollution. On the science side, the Department should be commended on its continued commitment to research in areas such as hydrogen, and should be especially proud of its sustained commitment to completing the Spallation Neutron Source, a new national user facility in Tennessee. As the FY06 budget process unfolds, I will be paying particular attention to 4 priority areas.

1. *Strong support for our national laboratories.* According to the National Academy of Sciences, nearly ½ of our nation's economic growth since World War II can be attributed to advances in science and technology. If we want that to continue, we need to invest in the research that fuels those advances at places like the Oak Ridge National Laboratory in Tennessee. This means we must make a stronger investment in fundamental research in the physical sciences and a more sustained commitment to regaining international leadership in advanced scientific computing at the National Leadership Computing Facility.

2. *Continued support for nuclear energy and practical solutions to nuclear waste storage.* Nuclear power-plants generate 20% of the nation's electricity but nearly 70% of the "emissions-free" electricity produced annually by this country. I'd like utilities to consider additional nuclear facilities and am glad to see that the Department continues development of next generation nuclear power plants. We need to create the right policy environment so DOE's investments result in a new generation of nuclear plants in the near future. On the issue of nuclear waste, clear leadership focus on Yucca Mountain is needed. TVA ratepayers have paid almost \$700 million into Yucca Mountain—with no tangible return to date. Their contributions represent approximately 2 years worth of TVA revenue from the 2003 rate increase paid by ratepayers all over the Valley.

3. *Support for clean coal technologies including coal gasification.* Tennessee and the states around it use a lot of coal to generate electricity. The U.S. has an ample supply of coal. The vast majority of my state is in non-attainment with federal air quality standards and the Great Smokies Mountain National Park is the most polluted national park in the country. To clean up our air, investment in clean coal technologies must continue to be a priority at the Department.

4. *Support for technologies that help reduce the price of natural gas so lobs stay here in the U.S.* This means funding methods to increase domestic natural gas supplies and reduce demand through new energy conservation solutions. I'll be introducing legislation regarding this subject in the near future.

I have a few questions I'd like to ask Secretary Bodman regarding some of these funding priorities.

Senator ALEXANDER. Mr. Secretary, thank you for coming. I have what I hope will be a constructive suggestion and a couple of questions about specific things. I know you were not part of making up of this budget, and I am a supporter of the President's effort to bring some fiscal discipline to the Federal Government.

But in line with some of the other comments that have been made, I think it would be a grave error for the United States to limit our spending in a way that keeps us from having economic growth, and more than half of our new jobs since World War II have come from advances in science and technology.

When I was Governor, I used to work hard to restrain Medicaid spending so that we could invest more in centers of excellence at the universities and in colleges and in schools and in research. I would say we should be doing that here. We were ambushed as a country by a terrorism. We're about to be ambushed by countries who want our jobs and our money, and I don't want to see our budget-cutting activities over the next 5 years get us on a glide path that underfunds our ability to grow new jobs, and I know you don't either.

So what I'm suggesting is within the councils of the administration. I hope you and the Secretary of Education and others suggest, for example, that if we're going to only restrain the growth of Medicaid by \$12 billion—we're going to spend \$1.2 trillion on it over the next 10 years—we restrain its growth by \$12 billion over the next 10, let's restrain it more and put more of that money into investments in research.

The Office of Science's own 20-year plan developed by this administration would double the funding for the physical sciences in the next 5 years, yet this budget takes it down. So we'll do our part on this side. There are a number of Senators on both sides of the aisle who want to see us make the proper investments in science and technology, and I'm just encouraging those within the administration, while you're making up the next budgets, to help with that.

Here are two specific questions. Last year, Senator Bingaman and I—I give him the credit—he encouraged me to go to Japan and see the earth simulator. I did, and as a result, all of us working together, we set about to recapture the international lead in high-speed advanced computing. In the Office of Science's plan, it's the No. 1 domestic priority, second only to the international fusion project.

Yet this budget does not adequately fund our effort to try to recapture the lead in international computing, yet we're starting two new programs in new computing. So my question is, why would we underfund this effort to help us get to 100 teraflops by 2006 in high-speed advanced computing? Why would we underfund that in order to start two new programs in computers?

Secretary BODMAN. First of all, this is one of those cases, sir, where the proposal in the budget this year is equal to or greater than the proposal in the budget last year, and that it was not one of trying to underfund. We've tried to make some tough choices, but we are continuing to fund the supercomputer at the level that

we had proposed to the Congress last year, and it is something I'm very enthused about personally.

I would also tell you, sir—as you know, from when you and I visited in your office—you will certainly have my support. I'm a great believer in science, and I think that's an important component of this Department. We are, however, in very stringent and difficult times from a budgetary standpoint.

Senator ALEXANDER. I understand that, but I think it's important, as I said earlier, that we've got a big budget, and the one thing we don't want to do in the next 5 years is underfund our ability to keep our standard of living. We're all giving speeches about that and beginning to understand it better right now, but the rest of the world understands we produce a third of the money for only 5 to 6 percent of the population. If we sit here and underfund science and technology and education without restraining Medicaid, then we're making a bad mistake.

My last question is, you were asked a question in your testimony in the House about the possibility of instead of the Department of Energy regulating the science labs, such as the Oak Ridge National Laboratory, might not it be better to let OSHA and the Nuclear Regulatory Commission do that sort of regulation? Might not they be better suited for that regulation, and might they not be more efficient in that kind of regulation of safety and health issues at your 10 science laboratories? I wonder if you've had a chance to think about that since then.

Secretary BODMAN. Yes, sir, I have had a chance to think about it, and my first priority will be to improve the safety and security powers of the individual laboratories themselves. Before we start seeking out help, I'd rather at least make an effort to see what we can do to improve the situation ourselves. So I would respectfully, at least at this point in time, like to focus on it. I think we can improve, and I would like to see us try.

I became quite confident, having visited Los Alamos and Sandia last week, that we will be able to continue to make progress there. And sometimes, sir, the appearance of help in the form of additional regulators is not what we need. What we need to do is manage what we have today better, and that's where I'd like to put my effort.

Senator ALEXANDER. Well, I didn't mean additional. I meant in lieu of for the science labs.

Thank you, Mr. Chairman, for your time.

The CHAIRMAN [presiding]. Thank you, Senator.

Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman.

Secretary Bodman, welcome officially as Secretary of Energy to your first hearing as Secretary before this committee.

Secretary BODMAN. Thank you.

Senator CANTWELL. I find a little bit of irony in having you, smart, business, MIT person coming here to try to sell this particular committee that somehow there is something wrong with cost-based power. But we'll get to that. And I look forward to the challenge of seeing how you defend this position.

But I'm assuming from your testimony this morning that you and the administration are still pushing the reform concepts of the power market proposal by OMB. Is that correct?

Secretary BODMAN. That's correct. It's the President's budget, ma'am, so it's not OMB, it's the President's budget.

Senator CANTWELL. Okay. That probably makes it even more clear to my constituents.

Second, are you aware of a letter that we sent on February 9 informing you that—actually, the agency—if it does participate in the use of public funds to investigate this proposal, that it is a violation of the Energy and Water Appropriations Act of 1993?

My predecessors from all throughout the Northwest have been clear for decades about this issue and this proposal, and Senator Hatfield clearly called for outlining of any public dollars to be used to promote or study this idea of shifting cost-based rates to market-based rates.

Are you aware of that letter? And when can I expect a response?

Secretary BODMAN. I am aware of the letter. I can't give you a date on the response, but you may be sure that you will be getting a prompt response.

The essence of the response will be that the President, under his constitutionally mandated authorities, does have the need to do sufficient work on any topic that he chooses to make a recommendation to the Congress on, and that the interpretation of the law to which you refer, which has been studied with some care over time, is interpreted to allow him sufficient flexibility to undertake his constitutionally mandated authority.

Senator CANTWELL. I think the reason why this language is there is because lawmakers think that you're wasting our time, just as this particular budget proposal will waste our time as well. I think that you will probably hear from the majority of members of this committee that they don't support this concept. I think we've heard from Senator Gregg that he doesn't plan on supporting it in the budget proposal. So I think that's why that language exists.

But let me turn to the real issue, because I think this is what we need to get down to. First of all, the Northwest economy has been greatly hurt. We paid \$30 million in emergency sales, ordered by the Department of Energy, for the California crisis. We've never gotten paid for it. We have had the lack of Federal regulators doing their job and getting us relief from fraudulent Enron contracts that we're still being sued to pay for.

Now this proposal, which is no more than an assault on public power and cost-based rates, is nothing more than an attempt to turn the lights out on the Northwest economy. Now, our Governor was just here, and not only do we have almost 10,000 signatures from rate payers saying how much they're going to be hurt by this, we even have evidence now of businesses saying they don't know whether they're going to get their financing for expansion in the Northwest, because they're concerned about this proposed rate increase on public power rates.

Now, I ask you, is the administration's problem with cost-based rates? Or is the administration's problems with standing behind some notion that somehow the Northwest is subsidized on these rates? Because I see no Treasury transfer of dollars. I could come

up with lots of programs here that represent a transfer of Federal dollars to specific interests. Public power doesn't meet that.

So fundamentally it seems that the administration, in your response to this proposal, your testimony today said that electricity rates should be closer to market rates. The reason why we don't want to be closer to market rates, we decided in the 1939 Reclamation Act that this proposal of cost-based rates, of getting power just at the cost that it takes to produce it, was good for the Northwest economy and good for the economy throughout America. And somehow this administration wants to say no, you should pay more than that simply because other people can't produce power at that rate.

So why should Northwest rate payers or rate payers in New Mexico or anywhere else have to pay more simply because an Enron or somebody else can charge more money? That's not the philosophy that this Congress has had for decades since 1939. So why do you want to change it?

Secretary BODMAN. To answer the question—you asked several questions during the course of that. To answer the question—

Senator CANTWELL. That's why I'm counting on that MIT expertise.

Secretary BODMAN. I'll try to do my best, ma'am. The administration's position on this matter is that there is a subsidization of the PMAs by the American taxpayer, and this is an effort to gradually change the rates so that they, over a period of time, can approach market levels. It's as simple as that.

Senator CANTWELL. So could you please tell me how there is a subsidization when there is no transfer of dollars from the Treasury? How could there be a subsidization?

Secretary BODMAN. I can tell you that the form of the subsidization involves the calculation of costs as they exist now, and it relates to the funding that was made available to these PMAs, not the recent funding during the 1990's, but the funding during the 1980's, 1970's, and 1960's, which was done at sub-market rates, and when the General Accounting Office, and when the Congressional Budget Office analyzed all of this, they too agreed that there is a subsidization of the PMAs. And so it's a simple matter of trying to correct what we view as a deficiency in the economics of the system.

Senator CANTWELL. Well, I know my time is up, Mr. Chairman, but I believe the GAO report refutes the notion that BPA and rate-payers are subsidized. In fact, I think that it shows just the opposite. So perhaps in the next round we'll have a chance to talk about that.

The CHAIRMAN. Thank you very much. Thank you, Mr. Secretary. Senator Bunning.

Senator BUNNING. Thank you, Mr. Chairman. Just a couple highlights in the DOE budget. There has been an actual 2 percent cut overall in the budget, 2 percent. If we get down into the budget itself, I heard Senator Wyden saying that the Hanford clean-up took a 7 to 8 percent cut. If you look at the Paducah clean-up, we're looking at a 13 percent cut in clean-up dollars.

Not only that, but we're having a terrible time continuing the clean-up because of the transfer from Bechtel Jacobs to other entities. Now we have a lawsuit preventing clean-up at all.

So my feeling is that your budget, the DOE's budget, cutting from \$111.3 million to \$98 million is unjustified. This was supposed to be a sped-up budget. In other words, we were going to clean it up faster. It's the first time in the history of the Department of Energy I've ever seen a clean-up go faster by paying less. Since I've been here, I've been here for 19 years, I've never seen us spend less and get more out of it.

The other thing at the Paducah plant is the DUF6 facility. You have proposed a decrease of \$5.1 million from \$55.9 million, and we're trying to build that so we can get rid of the waste that is on that facility.

Now, please explain to me the rationale, how you feel that you can get more for less, and accelerate the clean-up.

Secretary BODMAN. Sir, I hope it will not be the last time that you ask me this question. I do hope that over time we can find ways of getting a lot more for a lot less in the way we manage our environmental affairs in this Department.

Now, with respect to Paducah, I know of your interest in it, and I have looked at the whole range of efforts that are ongoing at Paducah. As I said in my remarks earlier, there are certain examples of the management of our departmental efforts that I think fall short of standards that I would have. This is one of them. We have had a delay beyond acceptable periods of time in honoring or pursuing bids that have been made.

As you've pointed out, sir, we now find ourselves the object of some lawsuits. It's something that well-intended people have arrived at a situation that I find unacceptable. And we will look hard at it to see if we can't make improvements so that I do not have to take this question from you again.

But I would tell you, sir, that with respect to the budget that is proposed, the budget for 2006, which is the proposal that is before you and that is being considered here today, does accomplish that which we need to accomplish in order to get the job done, and that unrelated to—

Senator BUNNING. We have a difference of opinion, but that's okay.

Secretary BODMAN. Yes, sir.

Senator BUNNING. We're going to have a lot of those for as long as you're here, for the next 4 years.

One other thing I am dumbfounded by is that you have removed all—everything that was in the overall comprehensive energy package on clean coal-burning technology, the tax credits. I know that is not specifically in your bailiwick, but it is overall in the Energy program.

We're down to \$50 million for clean coal power initiatives. We had \$2 billion in the overall energy bill last year in tax incentives for burning clean coal. Unless we do those things, Mr. Secretary, we are going to continue to depend on foreign sources for not only coal and the technologies that we arrive at, but in energy overall. We're going to be behind the 8-ball as far as depending on foreign imported energy sources, and we want to do just the opposite. That's why a bunch of us are going up to ANWR this weekend to look at a natural resource in the United States of America that

could take our dependency away from Saudi Arabia for a million barrels of oil per day over 30 years, just that one resource.

So we have to look at coal, which whether you like it or not, produces about 52 percent of our electric generation in the United States. So I think it's short-sighted that we don't spend more to develop clean coal technologies.

Secretary BODMAN. I can say a couple things, if I may, sir. First, we're great believers, I'm a great believer personally in coal generally and in research that is focused on improving the way we use coal. And so the clean coal power initiative, the other related activities that are in this budget, are something that I'm quite enthused about, and we have funded and will continue to fund in the future.

With respect to ANWR and other fossil fuels, I will be accompanying you, sir, on the trip this weekend, and I look forward to learning more about ANWR and about the opportunities for an additional source of energy of the sort you describe. And perhaps while we're traveling, you and I can have a chance to talk further about coal and the advantages of that.

Senator BUNNING. Dress warm.

Secretary BODMAN. Thank you, sir.

Senator CRAIG. Senator Murkowski.

The CHAIRMAN. Are you finished, Senator?

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman, and welcome, Secretary Bodman. I too look forward to joining you on our trip up north. I think it will be an opportunity to showcase what we have done in Alaska over the past 30 years with regard to exploration and development of, as Senator Bunning has indicated, an incredible resource for us. It has been done in a manner that highlights not only our technology, but highlights how we are able to do it in balance with the environment, in balance with the animals that live up there, and still provide economic opportunity to the Inupiat, to the natives, and to provide a resource for the rest of the country. So we're looking forward to that.

This leads me to my question and my concern, and that is the elimination, or the phase-out, of DOE research into accessing the non-conventional gas resources, and further into the technology side.

Now, you have indicated in your comments that with the price of oil at the heights that it is, quite honestly, private industry should be able to step forward and pursue these technologies. We do recognize that the price of oil is at unprecedented levels. Certainly there should be some incentives out there.

But I go back to comments that were made by Senator Alexander talking about certain policy decisions that we make. We want to make sure that we continue a level of economic growth. We want to make sure that we continue meeting the country's energy needs. But we also want to make sure that we're doing things responsibly environmentally. We're talking about clean air, we're talking about emissions. You will see when you come up north, climate change is real in Alaska. You will see it there. We need to be addressing the technology that allows us to adapt, that allows us to mitigate to the extent possible.

So there are policies that will help spur this advanced technology, whether it relates to oil or whether it relates to natural gas. It doesn't come cheap, and we don't necessarily see the answer in the first year.

We have been working for the past 5 years to see if we can't commercialize gas hydrates, unconventional sources of gas. We're looking at the potential of 32,000 trillion cubic feet of gas hydrates up north. But this program would phase that out.

This is an area, again, where we have the opportunity as a nation to reduce our dependence on foreign sources of our energy. We're already well past help when it comes to oil. But we don't need to go there with gas, and we've got an opportunity with gas hydrates. I want you to work with us in that area. We need the assistance there. I want you to see the advances that we have made.

I also want you to see what the technology has allowed us to do with the directional drilling so we're not impacting the tundra. The caribou don't even know that we are there. These are the types of incentives that have come about because we have had these programs in place, and I am hopeful that after your visit next weekend, we can maybe sit down and look at some of the benefits to this.

Now, I've used all my time talking, but it was important to get that statement out. What I do want to ask of you specifically with the gas hydrates, we need to have some assurance that the Department of Energy understands the importance to us of these unconventional gas sources. I would like your assurance that not only you'd work with us there, but that you would look at the technology that's being utilized up north, recognize the potential for us in ANWR so that we can develop responsibly and in a manner that works not only for the oil companies.

We're not looking to feather the nests of the oil companies with these incentives. We're looking to benefit the country through the advantage of the resource and benefit the region, my State, through sound environmental policies. So I need to know that you're going to work with us in these two areas.

Secretary BODMAN. Senator, I'm also happy to learn, and I look forward to going and to learning. I don't know what more to say. I would repeat that some very tough choices had to be made in the construction of this budget. And the ones that were made were the ones that were felt to be appropriate.

Obviously, it's now in your court, and the Congress will decide what it wishes to do. In terms of the unconventional energy resources, the hydrates that you mentioned, in terms of directional drilling, I'm also happy to learn more, and I expect to learn on this trip.

Senator MURKOWSKI. I appreciate your open mind. Mr. Chairman, I have one really brief question that I would like to ask of the Secretary if I may, and this relates to our natural gas pipeline. As you know, we were successful in enacting the legislation. We appreciate the assistance last year in getting the incentives moved forward.

We've had a conversation about DOE's role in moving this project forward once we figure out the logistics of the sponsors and what

authorization they file under with FERC. Among other things, your Department's responsibilities will include granting the necessary authorizations, conducting environmental rules, and really a lot of coordination with many, many agencies.

We know that we've got to get Alaska's gas to market as soon as possible. And in reviewing the budget, it's just not clear to me whether DOE has requested the funding necessary to carry out the responsibilities that your Department will have as we move forward with the natural gas pipeline.

Secretary BODMAN. We haven't, and we will need to undertake a reprogramming in order to get the necessary budgeting flexibility, which we will be undertaking, and I would certainly ask for your and the help of Congress in looking favorably on a reprogramming so we could do just what you request.

Senator MURKOWSKI. Okay. I'll look forward to discussing it with you on the trip, because there are some items that need to move quicker than others. Certainly the coordinated effort amongst the agencies is something that we need to key on very quickly, so I'll look forward to doing that. And as Senator Bunning said, dress warm.

Secretary BODMAN. Thank you.

Senator MURKOWSKI. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much.

Senator Akaka.

Senator CRAIG. I'm next.

Senator AKAKA. Thank you very much.

The CHAIRMAN. Senator Craig was here. That's all right. You were here much longer, so let's do that. Go ahead, Senator Craig, and then we'll go to Senator Akaka.

Senator CRAIG. Well, I do appreciate that accommodation. I need to get to the floor to get involved in the current debate. So Danny, thank you for the accommodation.

Mr. Secretary, I will not be going to ANWR. I know that climate change has warmed Alaska, but not enough. It will still be 30-plus below on the ANWR, and so I'll plan to go in the spring when the mosquitoes are out.

Secretary BODMAN. We'll give you a report, sir.

Senator CRAIG. I trust you will. The President proposes and the Congress disposes, and we are so disposed not to move our PMAs to market-based rates, and we will not do that. I believe that. The chairman of the Budget Committee agrees.

Let me tell you why. Bonneville Power repays the Federal Treasury for all of the power-related investments made in the Federal hydro system. BPA has made its Treasury payments in full on time for 21 straight years. In the last 3 years, the Bonneville Power Administration has prepaid the Treasury just over \$1 billion.

The claims that Bonneville are subsidized rest on the difference between the average interest rate of Bonneville's appropriated Treasury debt, and the long-term market interest rates that prevailed during the 1980's and the 1990's. That was a discussion that you and Senator Cantwell had.

According to the GAO, in 1996, the Bonneville Power Administration appropriated Treasury debt was being repaid at an average rate of 3.5 percent. Prevailing Treasury rates were 9 percent.

The region disagreed that the difference in interest rates that prevailed at the time represented a subsidy. As many of the Northwest pointed out at the time, it is like the bank claiming that it subsidized a homeowner who has a 6 percent fixed rate mortgage in an 8 percent mortgage market. I think there has to be some reality brought to this subsidy discussion.

But in order to put the perennial subsidy argument to rest, which we thought we had, the Northwest congressional delegation negotiated a refinancing arrangement for Bonneville's debt with the Office of Management and Budget, Bonneville, and the Treasury Department. The agreement was first introduced in 1994 by Senators Hatfield and Representative DeFazio, and finally enacted in 1996.

Here's how it worked. The net present value of the stream of payments that Bonneville owed was calculated at the time. The interest rate was arbitrarily increased to a market rate of 7.1 percent, which means we are repaying an average market rate today, above average compared to the rate today. The principal amount at the end of 1996 was in fact reduced from \$6.7 billion to \$4.1 billion.

The effect of increasing the interest rates and reducing the principal amount was that the net present value of the stream of payments the Treasury would receive remained exactly the same. In other words, the taxpayer was no better or worse off as a result of the transaction, with one important exception: Bonneville and the region's ratepayers agreed to pay an additional \$100 million earlier in the new repayment stream, thus leaving taxpayers \$100 million better off than they were before refinancing legislation was passed.

The \$100 million benefited and was confirmed by OMB. The Federal Government also confirmed that this refinancing resolved the issue of proposed or supposed Bonneville Power subsidy.

Here's what a former Secretary of Energy said in 1994: Benefits to the Government and this legislation are that it provides a minimum \$100 million increase in the present value of Bonneville's debt service payments to the U.S. Treasury. The increase represents agreement between ratepayers and the government to resolve subsidy criticism for outstanding appropriate repayment obligation.

Bonneville's customers recognized that recurring subsidy criticism must be addressed once and for all because of the risk they posed to Bonneville's financial stability and rate competitiveness. The legislation included assurances to ratepayers that the government will not increase the rate payment obligation in the future.

My message to you today is to pick up the phone and call OMB and ask them to read this, and stop the silly argument that the way they're going to increase the flow of revenue to the Federal Government is to dispute this agreement that we all came together on in 1994, Mr. Secretary, to deal with the criticism that still rebounds today.

There is no subsidy today. It has been effectively handled, and Bonneville has advanced payments by almost \$1 billion. So the ratepayers of the region, I believe, have met their obligation. That's my frustration.

Last, the chairman and I are very interested in new generation nuclear power. We get pushed back, we're moving ahead, we hope

to get cooperation from you certainly. That's going to be extremely valuable in the future. Everybody's talking about, including Wall Street and investors, that the name of game in town is clean technology. One of the greatest forms of clean technology today is nuclear, and yet to build that new generation facility, to create the efficiencies, to do the kind of things we want to do, which also embody the President's hydrogen proposal and hydrogen program, are within that.

So we trust that you'll be with us in that, that we won't continue to get the progressive push back from OMB simply because they're playing a numbers game in direct opposition to the language being talked about by the administration and by this committee and by this Congress collectively.

Thank you.

The CHAIRMAN. Mr. Secretary, I don't know if you have enough time to answer, but nonetheless—

Secretary BODMAN. I could just say—

Senator CRAIG. The Bonneville doesn't need to be addressed—

Secretary BODMAN. I just would say—

Senator CRAIG. I'm just simply saying, go back and read the content of the 1994 law. It's real. Let's don't play this game anymore.

Secretary BODMAN. I understand and I will certainly go back and read the 1994 law. I have not done that, and I will certainly do it. The statements I made before stand, sir.

With respect to NGNP, there is a serious effort on the part of this Department to do the research that is necessary to select a process for the eventual NGNP program. We just signed yesterday a Gen IV—a day before yesterday, I guess it was—a Gen IV agreement among five countries that will call for joint research related to a number of nuclear efforts.

I would be remiss, however, if I did not state that my understanding—I have not had the discussions about this personally—but my understanding is that there is a good deal of hesitation and concern about the \$2 billion, plus or minus, price tag on building an NGNP process plant in order to undertake this program. It's a very expensive effort, and the first thing will be to select the right process.

And that's what the 2006—I think it's \$45 million that's in there, a portion of which will be committed to the selection of a process. It's been suggested we talk to the National Academy of Sciences in order to get some help on that or to get verification that we've got the right approach.

But I would be remiss if I did not say that at least my understanding is there is some concern about whether we've got the wherewithal in order to deal with a \$2 billion price tag for the NGNP process.

The CHAIRMAN. Thank you, Mr. Secretary.

Senator Akaka.

Senator AKAKA. Thank you very much, Mr. Chairman. Mr. Chairman, I ask that my full statement be included in the record.

[The prepared statement of Senator Akaka follows:]

## PREPARED STATEMENT OF HON. DANIEL K. AKAKA, U.S. SENATOR FROM HAWAII

Thank you, Mr. Chairman, for calling this timely hearing on the Department of Energy's FY 2006 budget. I realize that the President has pledged to cut the nation's record-high budget deficit of \$427 billion in half by 2009. But to do so at the expense of discretionary programs, especially at the expense of critical energy programs, is not a wise decision given our high prices for crude oil, growing demand for energy, and current energy portfolio.

The federal budget is a template by which priorities are drawn and I have concerns about those priorities. This year, the discretionary part of the nation's budget will receive a *decrease* of about one-percent, the first real-dollar decrease in over 20 years.

The Department of Energy's Fiscal Year 2006 budget request of \$23.4 billion would add money for national security, hydrogen research, nuclear power and clean coal technologies, while *cutting* spending on science, environmental and conservation programs. The *result would be a 2 percent reduction in discretionary spending* for the Department of Energy, a decrease of over \$475 million dollars!

As you know, I have been a strong supporter of the DOE science and energy programs. I am disturbed that the FY 2006 request for the important programs in Science, including the Department's contribution to the U.S. Global Change Research Program, are cut by nearly 4 percent from the FY 2005 appropriations level.

I am extremely concerned about the elimination of Natural Gas Technologies programs. I authored legislation that shaped the Gas Hydrates program and have long supported the pursuit of Gas Hydrates research and development. Gas Hydrates represent a vast potential source of clean energy and warrant an intensified research and development effort. The Administration's request has scaled back enacted levels consistently since FY 2002, and *no funds* are requested in FY 2006.

The notable bright spots are increases for Hydrogen research and nuclear security, through the National Nuclear Security Administration. The NNSA budget is 2.5 percent (\$233.3 million) more than in 2005. Within NNSA, the Defense Nuclear Nonproliferation subgroup is targeted for a 15.1 percent budget increase. I am pleased to see this commitment to national and international nuclear security. I look forward to working with you on securing sealed nuclear sources that can be used as material for 'dirty bombs.'

Thank you Mr. Chairman. I have some questions that I will ask during the question and answer period.

Senator AKAKA. Mr. Secretary, thank you for being here, for taking on this huge challenge, and I realize you didn't participate in the drafting of this budget, but I'd like to discuss some of the issues.

The fiscal year 2006 DOE budget has a budget structure change relating to the off-site source recovery program. All of the National Nuclear Security Administration, or NNSA, and DOE programs related to nuclear materials removal and radioactive source security and recovery have been consolidated into a new unit to support the new global threat reduction initiative, GTRI, announced by former Secretary Abraham.

GTRI includes activities transferred from the Office of Environmental Management, the nonproliferation and international security and international nuclear materials protection and cooperation programs, and the off-site source recovery program.

Specifically, Mr. Secretary, the U.S. radiological threat reduction subprogram of the GTRI recovers and stores excess and unwanted sealed nuclear sources to reduce the threat of such sources being used in radiological dispersal devices.

I am pleased that the DOE budget request for USRTR budget reflects a meaningful increase from \$7.5 million to \$12.75 million for fiscal year 2006, and that the NNSA has moved aggressively in the past year to identify and recover such nuclear materials.

At a September 2004 hearing before this committee, the Director of the Office of Commercial Disposition Office of Environmental

Management, Ms. Christine Gelles, stated that DOE had located the responsibility for designating a permanent disposal facility for greater than Class C waste to environmental management. And yet, I cannot find evidence of this funding.

My first question, is there funding in the DOE fiscal year 2006 budget for the activities needed to identify a permanent repository for GTCC nuclear waste, such as an environmental impact statement, and for the facility or contract for disposal?

Secretary BODMAN. Yes, sir, there is funding. Are you speaking of Yucca Mountain, sir?

Senator AKAKA. Yes.

Secretary BODMAN. Which is meant to be the permanent repository, and there is funding for the Yucca Mountain repository that is in the 2006 budget.

Senator AKAKA. Yes, well it doesn't only have to pertain to Yucca Mountain. It could be for other facilities.

Secretary BODMAN. I'm a little confused by the question, so maybe if we could—

Senator AKAKA. Yes, well if—

Secretary BODMAN. If we can maybe deal with that off-line, I'd be happy to try to be helpful in providing the information that you want.

[The information follows:]

#### FUNDING FOR A PERMANENT REPOSITORY FOR GTCC NUCLEAR WASTE

DOE did not request funding in the FY 2006 Budget for the Greater-Than-Class C (GTCC) waste disposal activities because carryover funds (approximately \$1.5 million) from prior years are sufficient to fund the ongoing GTCC Environmental Impact Statement (EIS) activities through FY 2006. DOE plans to request funds in the FY 2007 Budget to complete the EIS and to begin implementation of the Record of Decision for GTCC disposal.

Senator AKAKA. Yes. I know I mentioned so many different agencies here and their relationships. I would appreciate a response from you on this.

Secretary BODMAN. It shall be done, sir.

Senator AKAKA. In writing, yes.

Second, can you please confirm, Mr. Secretary, for the record that the responsibility lies within or with environmental management, and comment on DOE's progress and plans to identify a process and site for these wastes? So for the record if you'll provide that for us, I'd certainly appreciate that.

Secretary BODMAN. I would be happy to provide for it to the extent that—again, I'm a little unclear as to the exact nature of the question. There is in the budget—and in an organization separate from environmental management, in the so-called Radioactive Waste Office, where there is significant funding that—that is geared to the creation of a permanent repository for nuclear waste. That is something that we devote a good deal of time, money and effort to.

[The information follows:]

#### RESPONSIBILITY FOR FUNDING FOR A PERMANENT REPOSITORY FOR GTCC NUCLEAR WASTE COMMENTS ON PROGRESS AND PLANS TO IDENTIFY A PROCESS AND SITE FOR THESE WASTES

The Office of Environmental Management is responsible for completing the Greater-Than-Class C (GTCC) Environmental Impact Statement (EIS) and determining

how the Department will meet its responsibilities for disposing of GTCC waste. Current efforts are focused on performing the necessary National Environmental Policy Act (NEPA) analyses, including the development of an EIS. This spring, we expect to issue an Advance Notice of Intent, which will request comments from the public and interested agencies about the proposed EIS, the preliminary range of disposal alternatives, and the potential issues related to DOE's decisions for this category of waste. In addition, we are in the process of developing updated inventories of commercial GTCC waste and comparable DOE waste, which is essential for analyzing potential disposal options. We also have entered into discussions with the U.S. Environmental Protection Agency and the U.S. Nuclear Regulatory Commission about their potential participation in the EIS as cooperating agencies. Upon completion of the EIS, DOE will issue a Record of Decision documenting how it intends to meet its responsibilities to dispose of GTCC low-level waste. The entire EIS process usually requires 1-1/2 to 2 years from the issuance of the formal Notice of Intent (which is expected to be issued later in 2005) to the issuance of a Record of Decision.

Secretary BODMAN. There are other issues with respect to the environmental management's efforts to deal with the legacy wastes that occurred in various sites, including the State of Washington, including Idaho, including Tennessee, Ohio, and so forth. And so that's the province of the environmental management folks. And there is funding in the budget to focus on that as well.

Senator AKAKA. Thank you, Mr. Bodman.

Mr. Chairman, my time has expired. I have other questions, but I'll submit them for the record.

The CHAIRMAN. Okay. If we don't have time, will you submit them for the record?

Senator AKAKA. Yes.

The CHAIRMAN. Senator Smith, I think it's your turn.

Senator SMITH. Thank you, Mr. Chairman. Secretary Bodman, welcome. Thank you, Senator. You've probably noticed that there are a lot of Northwest Senators on this committee.

Secretary BODMAN. I have taken that into account, sir, yes, I have.

Senator SMITH. You'll also recall that in our first visit when you were nominated, you and I reviewed the history of public power in the Pacific Northwest and how much a cornerstone it was to the economy of the Pacific Northwest. I won't reiterate what I was going to do—reiterate what Senator Craig indicated, but there is no subsidy anymore. This was all—to the degree there was, was resolved with the Hatfield agreement. It is the statutory law of this country.

Notwithstanding that, President Bush isn't alone. When I got here, President Clinton made a run at the same thing, because it is much misunderstood apparently by OMB. We defeated it then and we must defeat it now, and I believe we already have. So I hope you're not counting on those market rates for your budget, because they're not going to happen.

The Northwest Power and Conservation Council has estimated that the proposal to have BPA go to market-based rates would result in a 65 percent rate increase for customers in the Pacific Northwest. Did OMB to your knowledge do any calculations on what an impact of such a rate increase would be on industries in the Pacific Northwest? Was any thought given to that, and on unemployment rates that are already too high in Washington, Oregon, and Idaho?

Secretary BODMAN. I can't speak to the question of unemployment rates, but OMB did do calculations with respect to the impact on the ratepayers of your region, sir. They did do that. Their numbers were significantly below the number you just quoted.

Senator SMITH. You know, I'm a businessman in a commodity business. I understand supply and demand and I understand markets very well. But there is a real misunderstanding of markets to think that there is a market in the Pacific Northwest when it comes to power production. Bonneville Power is a public entity that finances endless claims on its treasury, to say nothing of its obligation to the treasury that it not only meets, but exceeds. But it has obligations to the tribes in terms of treaties, it has obligations to Canada in terms of the management of the river. It has obligations to more public entities than we've got time this morning to indicate.

So the notion that it is producing market-based power is ridiculous. It is serving endless public needs. To the degree that you want us to go to a California-style spot market for rates in addition to that just simply hits our region with a cost that misunderstands the law, and certainly, I think, devalues the people of that region and misunderstands as well their history.

Frankly, because we are current on all of our BPA payments and the interest rates are at market rates, as I understand, we've even prepaid Treasury debt, can you tell me of any other public works project in U.S. history that has returned this much money to the U.S. Treasury? Do you know of any public works project that's got a rate of return like BPA does to the Treasury?

Secretary BODMAN. I haven't tried to do a history of all the public works projects. I'd be happy to take a look at it.

Senator SMITH. You won't find any.

Secretary BODMAN. There is no effort, sir, to demean or degrade the citizens of any region. This was strictly an effort to reconcile what is deemed to be a difference in the rates of subsidy among the different PMAs that exist, in our view.

Senator SMITH. Well, this was harmful to President Clinton when he tried it in our region, and it's harmful to President Bush. I sure hope that they'll back away from this, the sooner the better. I think the Congress has already backed away from it in terms of the budget that will be brought to the Senate floor.

Do you know, is any other region of the country making as much investment in new transmission as the Pacific Northwest?

Secretary BODMAN. I don't have the figures by region, sir, so I can't speak to it. I'd be happy to get those for you if that's useful. [The information follows:]

Yes, there appear to be other regions of the country that are making as much new investment in transmission as the Pacific Northwest, relative to the value of their existing transmission assets. These regions include the Electric Reliability Council of Texas and the California Independent System Operator. However, the existing Federal data sources are not comprehensive enough to draw strong conclusions about regional patterns or trends in major transmission investment.

Senator SMITH. Well, part of the problem with the California crisis that occurred a few years ago was much related not just to production but to transmission. In response to that, BPA has tried mightily to add to transmission, and obviously that takes borrowing authority. Yet I understand that the administration wants

to restrict needed transmission upgrades, in other words, reduce their borrowing authority.

If that's done, we're simply not going to get third-party financing arrangements with those kinds of borrowing ceilings, and it just hurts the future, it really does cloud it. So I hope that that can be rethought as well.

You've probably heard enough on this issue today, but I hope you have a sense of what kind of a wall the administration is running into in the Congress.

Secretary BODMAN. I do have a sense of it, sir.

Senator SMITH. Thank you.

The CHAIRMAN. Did you have another round or—

Senator BUNNING. Mr. Chairman, I will just submit some questions to the Secretary.

Senator SMITH. Mr. Chairman, I just wanted to ask one more thing.

The CHAIRMAN. Please do.

Senator SMITH. Mr. Secretary, can you commit that the Department will not attempt to force BPA to charge market-based rates administratively in violation of current law?

Secretary BODMAN. Senator, there is no way that this Department will do anything in violation of current law.

Senator SMITH. That's a good answer. Thank you.

The CHAIRMAN. Well, I'm going to excuse myself for 2 minutes and turn it over to you, and I will return because I have a number of questions.

I just want to make an observation about PMAs. It has nothing to do with merits. You will soon be participating in another round of budget discussions, and I think you should look at the history of submissions of PMA reform and what's happened.

Now, it's good that Presidents continue to submit policy matters that are significant. But I think you ought to think through and make a point that if you're going to continue to put them in your budget when they're not going to happen, then we're just jeopardizing programs that we know we need, because we can't get the savings. If we're expected to meet a goal, you're just taking that amount, and in a sense saying, we all know it's not doable, but as a matter of policy we want to put it in there, but then we have to cut all the other programs.

I can tell you this is reminiscent of President Nixon sending us proposals—he started it and then over and over again—to privatize a nuclear enrichment program. They finally stopped submitting it and then we did it. It took 26 years.

So in the meantime, every President put it in and we were expected to make the money from the sale, and I'm very thankful. That was the biggest privatization done in about 8 years, and I did it with the help of a Senator from Kentucky. I just give you an analogy that sooner or later it gets counterproductive for your Department and expenditures.

Now, Senator Cantwell, if you will preside and then I will return shortly and we won't take much longer, Mr. Secretary.

Secretary BODMAN. Thank you.

Senator CANTWELL. Thank you, Mr. Chairman, and thank you for your comments as well about power markets. But I think, Mr.

Bodman, I think your break-off from our last discussion, which I wanted to pick up on, has adequately been addressed by the exchange between you and my colleagues from the Northwest. So I think I'll stop on the subsidy point, but we will certainly be looking for your response to that issue.

Let me, if I could, turn to the Hanford budget issue, and the fact that the DOE cuts to Hanford seem to be, I would say, at odds with our ongoing commitment for clean-up, given the tri-party agreement that we have between the State of Washington and DOE. Can you explain to me why Hanford received more than half the cuts in the Environmental Management budget despite the fact that it continues to be really at the early stages of clean-up? Why would we juxtapose to Oak Ridge or Rocky Flats, you know, over half of those cuts come from the Hanford budget?

Secretary BODMAN. First, Senator, it is the intention of this Department to comply with the tri-party agreement that you alluded to in your question.

Senator CANTWELL. And since you just brought that up, could you clarify that also means cleaning up 99 percent of the tank waste?

Secretary BODMAN. That's correct. That's correct, and that's what the commitment is and will be and we will tend to honor that.

Senator CANTWELL. Thank you.

Secretary BODMAN. With respect to the reductions, I think I alluded to those before, but they were one that certain components, certain parts of the project have actually been completed—we have seen a modest part of the reduction is due to the fact that there have been some completed portions.

The largest part of the reduction is related to the slowdown that has occurred in the building and the construction and the need to redesign the foundations of the vitrification plant during the process of construction. It is not a circumstance that I as an engineer am very happy with, but we have what we have.

And apparently we have a situation where there was either inadequate attention given to or inadequate information available during the original design of this plant, and therefore there is a process ongoing of reverifying and rechecking all of the foundation calculations related to the vit plant. And therefore, that process has slowed down the construction. I don't like it, you don't like it, but those are the facts. It seems to me to be not an unintelligent way to proceed given the circumstances that we are now faced with.

And then third, there are differences, as you're aware, between the Department's view and the State of Washington's view of the WIR situation, and therefore, that in and of itself has caused a delay in certain aspects of it. And so we have limited funds, and so we have decided to put those funds where we have a higher degree of certainty, where we do have agreement, and where we don't have the same sort of problems.

We are continuing to spend over \$1,800,000 if Congress approves this budget. It is not an inconsequential amount of money. It remains the biggest program that we have, and it will certainly have my attention any time we're spending that kind of money. It needs to have the attention of the Secretary and it will have.

Senator CANTWELL. Thank you, Mr. Secretary. I think our new Governor is most anxious to work with you on the settlement of the WIR issues and move ahead, and certainly we will want to follow up with the discussion on the vit plant and commitment on the budget.

But I appreciate your——

Secretary BODMAN. If I could just say, I did meet your Governor when she was in town earlier this week, and we did have a brief discussion of it, and I expressed to her the same commitment that we will do our very best to try to honor this.

Senator CANTWELL. Last year, Congress gave the Department of Energy the broad authority to reclassify waste at Savannah River and at the Idaho National Lab as well, the Engineering Environmental Lab. So basically it was the ability to leave tank waste in the tanks. Now, that wasn't something I agreed with. In fact, I thought it was a big mistake.

Earlier, this week, the National Academy of Science issued a thoughtful report that basically confirmed, I think, what we were saying here, those of us who objected. The report rejected the notion that DOE should be making these decisions, and this was something Senator Alexander and others had brought up that basically that DOE shouldn't be making these decisions, and basically called for the Nuclear Regulatory Commission or EPA to have the final say on this issue. This was something of high importance that basically ended up going through the Armed Services Committee, a committee that, I believe, this committee thought didn't have jurisdiction to make that decision, and was stuck into the Armed Services' budget.

So I don't know if you're familiar with the National Academy of Science report, but would you be willing to work with us on developing a new regulatory regime as it relates to waste replacement and the authority that was, I think, rushed through, I should say, in last year's Defense Authorization bill?

Secretary BODMAN. I am, Senator, familiar with the National Academy's report in that I know there was a report. I have not yet read it. I think it just came out yesterday or the day before, so it's really fresh off the presses, and it—the schedule did not permit me enough time to read the report prior to this testimony.

I will certainly plan to read the report and take into account any recommendation that the Academy makes. I have to say that in the absence of that—again, without the benefit of that—I have looked at the agreements that were struck with respect to giving the Department, or giving the Secretary, I believe, the authority of making a judgment with respect to the nature of the WIR waste, and allowing the Department to proceed with the clean-up.

I would hope that over time perhaps we could develop a level of trust that we're going to take this matter seriously, we do take it seriously, and that we could find a way to accommodate the wishes of you, of your Governor, and your constituents. And I will certainly do that.

Senator CANTWELL. I don't think it's really about the wishes of an individual state. Trust is an interesting word, and I think we all want to have it, but this is about science. What we want are not members who want to cut a deal on a budget so that they can

say, yeah, we want more money and so we'll go with expedited clean-up, we'll leave tank waste in the tanks. We want science to be based—we want our decisions to be made on what that science says.

And right now, the National Academy of Sciences also agrees that this was not a well-thought-out strategy to give the Secretary of Energy the ability to just decide this. This is an important decision that has to be considered by a variety of organizations that have been involved.

I think one of the things you'll find quite interesting is when you look at the regime of definitions of high-level waste, and how the change in one definition then triggers the requirements or their lack of requirements on clean-up or transportation of those wastes, you'll see how complex this regime of definitions is.

So I would just say to you in reading that National Academy of Science report, it's not whether someone trusts the Secretary of Energy. It's whether our decisions should be based on sound science. So I hope you'll take that into consideration.

Secretary BODMAN. Senator, I have a doctorate in science from Massachusetts Institute of Technology. I believe in science and I understand the need for having sound science in reaching conclusions. I will certainly take advantage of that background as I go about my work.

Senator CANTWELL. Well, as I have said to the chairman before, I'm hoping at some point in time we will get an Energy Secretary for life that will then proceed in cleaning up Hanford, and certainly your science background would be very helpful in that.

We continue to have these debates about science, and at this juncture, we continue to debate issues that I think that really should be resolved. And in this particular case, the level of tank waste, we want to have a decision that everybody agrees on because of that science. So I appreciate your efforts.

The CHAIRMAN. Well, I heard the desire to have a Secretary for life to solve that problem out there. I was just thinking about the Bible and that person would have to be Methuselah, it's going to take so long at the current rate and with all the arguments we've got.

I frankly believe, not necessarily in contradiction to what's been said by the distinguished Senator, but I think we've made some terrific progress in the last 3 years on clean-up, the kind we're talking about. If we were to continue on the previous path, this comes out of the DOE defense budget, we'd have taken up a third of the budget out here in about 15 years to do the clean-up in the country, and it can't be done. We've got to figure out some practical way.

I urge that along with pure science that you also continue to have in mind what's realistic in terms of risk. And enough on that.

Mr. Secretary, Yucca Mountain continues to be a terrific goal and nuclear is looking at it saying we must have something like that, so we have to keep moving ahead. We don't have enough time here, and I don't want to give a lecture. I think it would be good if you could review just the real status of Yucca Mountain. You know, it is not just a problem of funding, it's not a problem of again setting

a new licensing date. It's an analysis of just how can we get where we have to go.

I mean, these guidelines, the court decision, who's going to make the new guidelines, I think you have to know realistically what this is all about. I would hope that in a sense of helping us, if you could do such a summary and make it available as kind of an adjunct to this hearing, do you think you might be able to do that with your people? I think it would be a good exercise anyway, because it's sort of amorphous from the standpoint of what we see happening. I guess you understand what I'm talking about.

Secretary BODMAN. I do understand, sir, and you certainly have my commitment that I will be—this is again—this is a major responsibility of this job, and I will certainly look into it and I will certainly try to determine what a practical and reasonable and responsible way of proceeding is. And I will be happy to discuss that with you.

[The information follows:]

There are several issues facing the Yucca Mountain Program which the Department is working to overcome to move the program forward.

The U.S. Court of Appeals for the District of Columbia Circuit vacated the Environmental Protection Agency's (EPA's) Yucca Mountain radiation protection standard with regard to its 10,000 year regulatory compliance period. Consistent with the President's direction, EPA is currently working to revise its Yucca Mountain radiation standard to conform to the court's direction. The Department remains hopeful that EPA's work in promulgating the standard will be contemporaneous with our work on the license application and that both will be completed by the latter part of the year.

Both Congress and the Administration have recognized the long-term funding problem facing the Program and the need to make Nuclear Waste Fund monies available for their intended purpose. Historical funding patterns will not be adequate to support the increased construction and acquisition activities required to begin acceptance of spent nuclear fuel and high-level waste. The Administration believes that the fees currently paid to the Government by utilities to finance the repository should be treated as offsetting collections against the appropriation from the Nuclear Waste Fund. To ensure stable and sufficient funding, the Administration continues to support the concept embodied in the legislative proposal submitted last year to provide the increased annual funding needed for construction and operation of the repository. The Administration remains interested in pursuing such a proposal and intends to have further discussions with Congress in the hope of reaching some agreement.

Despite these issues, the Department is continuing its efforts to move the program forward. The Department has developed a draft license application. We are working diligently to refine the analysis and improve the presentation of the technical information to meet our objective of completing preparation of a high quality license application that addresses existing regulatory requirements and having it ready to submit to the Nuclear Regulatory Commission by December 2005.

The CHAIRMAN. You know, you might be the kind of Secretary that may end up saying, while we're looking at this, we've got to something else, because this might be something that takes so long while we move ahead with it. I don't know. I'm thinking we have a responsibility to do that too. But ultimately we have to do it in conjunction with you all.

Secretary BODMAN. I'll be happy to work with you, sir.

The CHAIRMAN. Now, plutonium disposition, we're all talking about trying to maximize the effort that had been going along fairly well by the United States and other countries, with reference to the kind of dangerous materials like plutonium and trying to gather up all those materials.

I need assurance from you, which I'm sure you will give us, that you will push as Secretary of Energy for a conclusion to this agreement with the Russians to get this huge plutonium agreement implemented. I'm concerned about sooner or later losing this huge nest egg of money, \$200 million sitting out there to get this job done. I say it because I know you know, but I just want you to tell the committee that you will pursue it.

The State Department is cooperative. They aren't always as interested in pursuing things. I shouldn't say that. They also find more reasons to not reach conclusions than you all. You've lost, or will lose soon, the best person you have over there in this area. I'm very sorry about that. If you know what I'm talking about, you might take a look. That's a very, very bad loss.

Now, as part of all this, we have a MOX fuel project. You're aware of that?

Secretary BODMAN. Yes, sir.

The CHAIRMAN. That's historic for America. Could you kind of give us a timetable for the record on MOX, the plant that we're building?

Secretary BODMAN. Well, the issue, as you're aware, sir, has been related to our getting an agreement with our Russian counterparts as to the definition of liability in the construction that is anticipated to occur in Russia as a part of this process. And we have recently made a proposal to the Russians that seems to have at least gone part way to relieving that delay.

We find ourselves, as with a lot of these projects that I'm responsible for, with an intersection between the legal requirements on the one hand and the engineering requirements on the other hand. And therefore, we can't proceed until we have the legal agreement that will enable us to go forward in an acceptable way.

So you certainly have my commitment, sir, that I will be working diligently with our colleagues in the State Department to—I already have spent a day with my counterpart on the Russian side, and we're going to continue to try to work on this issue and see if we can't get this pushed through.

It is hard. I mean, the Russians have their own—

The CHAIRMAN. No question.

Secretary BODMAN [continuing]. Pace, and own way of doing things, and so I don't want to make any promises. The only thing I can promise is that I'll work very hard on it.

The CHAIRMAN. Well, Mr. Secretary, my experience has been that one of the ways in the past that you can make progress with the Russians is to get to know the people that you're working with. I mean, they have a—for some reason, maybe it's justified in their history or culture, it's very much easier to deal a short distance than long distance, and that's why some of our people had success.

Sig Hecker, who I introduced to you in Los Alamos—

Secretary BODMAN. Yes.

The CHAIRMAN. He's kind of the breakthrough man, because he spent enough time to get to know all these people. They all know him—you know, he can call them on the phone and they know who it is and they're willing to talk.

We put in some new people, and you know, it takes time. We don't know how long it takes the Russians to arrive at a conclusion

that they're talking to the right person and where it belongs in their bureaucracy. So you will find that out, but I think your willingness to meet this early is terrific news.

Secretary BODMAN. I appreciate your advice, sir.

The CHAIRMAN. A little trivial item, but it kind of disturbs me. We have an Office of Nuclear Energy Research Programs. Now, I don't understand why the President's budget requests \$1 million for the National Academy of Science to undertake an evaluation of that office. You might not even know about that.

Secretary BODMAN. Well, I do know that there is a request or an intention at least of pursuing the evaluation of the Gen IV technology, and it may be that's what the NAS requirement is. I don't know.

The CHAIRMAN. Well——

Secretary BODMAN. I will be happy to get you something more. [The information follows:]

The FY 2006 Budget requests funding for the National Academy of Sciences, to undertake a comprehensive, independent evaluation of the nuclear energy program's goals and plans, and to validate the process for establishing program priorities and oversight (including the method for determining the relative distribution of budgetary resources). The evaluation will result in a comprehensive and detailed set of policy and research recommendations and associated priorities (including performance targets and metrics) for an integrated agenda of research activities that can best advance NE's fundamental mission of securing nuclear energy as a viable, long-term commercial energy option to provide diversity in energy supply. An interim evaluation will be completed in time to inform NE's 2008 budget planning, with a final report completed before May 2006.

The CHAIRMAN. We're going to have to appropriate this thing—it happens to be I'm the chairman of the appropriating subcommittee, and I won't put this in if you all don't convince me that it's for that. I'm not going to have them look at the whole office of Nuclear Energy Research unless you tell me there's something to be looking at. I don't want it delayed by something like this.

Secretary BODMAN. All right, sir.

The CHAIRMAN. So, if you'll have your staff let us know.

Secretary BODMAN. I'll be happy to do that.

The CHAIRMAN. My last one, but before I submit it, I want to say everything isn't bad in this budget. You know, we haven't talked about the nuclear energy research and development programs, there's a significant increase, the initiatives on research for nuclear—while some small ones have been zeroed out, clearly the advanced fuel cycle initiative is in good shape, the NP 2010, 83 percent increase. That's pretty good. I don't know how much faster we can go.

For a change, Yucca Mountain was funded right, although not at enough money. At least we don't have to spend all our other program money for Yucca, which we can't do. So we're grateful that that's in the budget.

The hydrogen fuel initiative is pretty good. You could have cut that \$80 or \$90 million and paid for some of these other things, but I think the priority is right.

Fossil fuel energy, not bad, an 18 percent increase. Incidentally, those all come to the Appropriations Committee now in one place instead of it going to two subcommittees. All of those will come to the——

Secretary BODMAN. That's great.

The CHAIRMAN. I think it's good for the country. For me it's good to know that we don't go one way here and another way there.

Now, my last issue has to do with——

Secretary BODMAN. If I could just say so, I'm happy that you find certain aspects of the budget positive. That's good.

The CHAIRMAN. Thank you. They put pretty much all of Energy in one place, not quite, but that's good enough.

One last issue that is not necessarily parochial, but would seem small, because it has to do with small business and small business set-asides, shouldn't be burdening a Secretary with it. But it's the kind of issue that will burden you if those in charge don't take care of doing it right.

So there are two or three issues that are tough. One, the DOE is going to be rated as an inferior participant in giving out small business contracts, which means they're going to be deficient in small business contracts to the minority, because they're going to rub shoulders.

Now, part of that is because the DOE has very large M&O contractors, and they're judging the performance excluding the M&O contractors. Now, I can't fix that yet. I'll fix it in appropriations if we can't find a way, and I urge that you try to find a way. I don't know how, but get the government together and say, we can't do this.

Second, it seems that in response to some problems in the small business set-aside evaluation, that the NNSA is proposing to bundle contracts. Now, I thought our President told us for the purpose of small business, in particular minority small businesses, that we wouldn't bundle, even though it was slightly more efficient, to the detriment of small business.

Your NNSA people in Albuquerque and Los Alamos are moving in that direction. I don't like to go over there and tell them what I think. I'm telling you what I think. I hope you'll tell the Ambassador, who in turn will tell those people, that we need some real justification for this bundling, which makes less small business opportunities.

So the whole package I'm talking about is small business, and you have somebody in charge. I hope you will just tell him that the Senator doesn't want to cart them up here, but I will. We'll have a hearing with them if they want to, because we've got to fix these, and we're willing to work on it. Senator Bingaman's willing to work on it. So I leave you with that.

Secretary BODMAN. I think they'd rather have me here, sir, than to have them there, so we'll go to work on it.

The CHAIRMAN. I hope so. So we're going to close the hearing. I ask consent that Senator Salazar, who was indisposed with other business, that he be permitted to place his statement in the record as well as others, and that Senators be allowed to submit questions. We hope that you will answer them within a reasonable time, you and your staff. I appreciate your willingness to work with us. We're in recess.

Secretary BODMAN. I look forward to it, sir.

[Whereupon, at 12:04 p.m., the hearing was adjourned.]



## APPENDIX

### RESPONSES TO ADDITIONAL QUESTIONS

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#### RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR DOMENICI

##### LOS ALAMOS RFP

*Question 1.* Secretary Bodman, as I noted in my opening remarks, I am deeply concerned with the Los Alamos Draft Request for Proposal. The Department must assure that the bidding process is fair and does not have the unintended consequence of causing a mass exodus of our best scientists from the lab.

Mr. Secretary, will you actively involve yourself in the RFP process as soon as possible and work to make job retention and scientific research a top priority?

Answer. Yes, I have been actively involved in the Los Alamos National Laboratory (LANL) procurement since my confirmation as Secretary of Energy. I have met with Ambassador Brooks and the Chairman of the Source Evaluation Board to review this critical procurement to understand the employee issues, industry perceived barriers to competition, and what the SEB is doing to address these matters. I have made recruitment and retention of critically skilled employees my top priority and will continue to stay involved with the process to make sure that we strengthen LANL and its scientific capabilities to enhance science in the national interest while ensuring a fair and open competition.

##### SMALL BUSINESS BUNDLING

*Question 2.* Mr. Secretary, I understand that DOE is last among federal agencies in terms of compliance with the small business contracting goals set by the Administration. I also recognize this is a result of policy that prohibits the Department from counting small business sub contracts let by the M&O contractors.

To address this shortfall, NNSA has proposed an initiative to take \$100 million in procurement from each of the three NNSA labs and bundle them to be offered by either the Albuquerque Service Center or Headquarters.

Both Sandia and Los Alamos place at least 45% of their subcontracts with small business—well over the SBA required level of 23%.

If, however, NNSA insists on consolidating a large number of contracts I am concerned that this will have a serious impact on small business in New Mexico the economy and State tax receipts.

It is likely to impact the labs through a reduction in LDRD funding and may reduce NNSA mandated small business goals negotiated by each lab.

This program is ill conceived and poorly executed as the procurement targets have varied widely as have the goals and terms proposed by NNSA.

I am aware that the Department has negotiated a one-year grace period in which to achieve this goal.

In light of this grace period, can you please explain why you have insisted that the NNSA proceed with this proposal despite strong objection by the labs?

Answer. While the NNSA has not instituted a grace period for implementing the Tri-Lab initiative, it has planned a phased implementation. The NNSA agreed to wait until fiscal year 2006 for full implementation of funding aspects of the initiative. During fiscal year 2005, the laboratories were allocated the funding associated with Tri-Lab actions to be placed directly by the NNSA. Funding was transferred to the Service Center as procurement actions were accomplished. By doing so, LDRD funding, fee bases, and indirect cost pools were not impacted. NNSA and its laboratories are exploring alternative funding mechanisms for future years. Working closely with the laboratories, the NNSA has identified potential contract opportunities that will result in obligations between \$10 to \$20 million in additional federally awarded small business contracts for the current fiscal year.

The expectation that DOE and NNSA can award 23% of the NNSA budget to small businesses when more than 80% of the DOE/NNSA budget is obligated to Management and Operating contracts presents a real challenge. Nevertheless NNSA continues to strive for increases in the amount of prime contracting dollars awarded to the Small Business community, and we are working to support the 23% federal-wide goal. In the absence of relief as to how NNSA account for its contribution to Small Business contract awards, by recognizing that the subcontracts of our M&O contractors are providing substantial mission opportunities for Small Businesses, the NNSA has undertaken an innovative strategy to increase small business acquisition opportunities that can be counted as SBA and the Office of Federal Procurement Policy have mandated as prime federal contract awards, and that is consistent with commercial best practices of strategic sourcing and enterprise-wide buying. The NNSA initiative to jointly work with its laboratory contractors to identify requirements that can be awarded directly by the NNSA to small businesses is an innovative strategy by which the NNSA will be able to generate additional prime contract small business awards.

*Question 3.* Mr. Secretary, I understand that DOE is last among federal agencies in terms of compliance with the small business contracting goals set by the Administration. I also recognize this is a result of policy that prohibits the Department from counting small business sub contracts let by the M&O contractors.

To address this shortfall, NNSA has proposed an initiative to take \$100 million in procurement from each of the three NNSA labs and bundle them to be offered by either the Albuquerque Service Center or Headquarters.

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This program is ill conceived and poorly executed as the procurement targets have varied widely as have the goals and terms proposed by NNSA.

I am aware that the Department has negotiated a one-year grace period in which to achieve this goal.

The GAO is currently reviewing DOE subcontracting rules for a report later this year. Would you agree to put off execution of the Tri-lab bundling proposal until the GAO completes their work and submits its recommendations?

Answer. Further implementation of the Tri-Lab initiative is planned for the next fiscal year. As they become available, I will ensure that findings and recommendations from the GAO will be thoughtfully considered and integrated as appropriate into our small business program planning. However, NNSA efforts to directly award certain contracts to small business in FY2005 must continue as these actions are close to completion and not proceeding could result in delays that might have an adverse impact on laboratory programs.

As a matter of clarification, the Tri-Lab initiative involves federal award of individual requirements to small businesses as well as strategically consolidating requirements of a similar nature for award to small businesses. The initiative does not constitute contract bundling, as that term is defined in Part 2 of the Federal Acquisition Regulation. “Bundling” or “bundled requirement” refers to the consolidation of two or more procurement requirements for goods or services into a solicitation of offers for a single contract that is likely to be unsuitable for award to a small business concern. The unsuitability may be due to the diversity, size, or specialized nature of the elements of the performance specified, the aggregate dollar value of the anticipated award, the geographical dispersion of the contract performance sites, or any combination of these factors.

*Question 4.* Mr. Secretary, I understand that DOE is last among federal agencies in terms of compliance with the small business contracting goals set by the Administration. I also recognize this is a result of policy that prohibits the Department from counting small business sub contracts let by the M&O contractors.

To address this shortfall, NNSA has proposed an initiative to take \$100 million in procurement from each of the three NNSA labs and bundle them to be offered by either the Albuquerque Service Center or Headquarters.

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It is likely to impact the labs through a reduction in LDRD funding and may reduce NNSA mandated small business goals negotiated by each lab.

This program is ill conceived and poorly executed as the procurement targets have varied widely as have the goals and terms proposed by NNSA.

I am aware that the Department has negotiated a one year grace period in which to achieve this goal.

Can you please guarantee that this proposal will not impact current small business contracts in New Mexico and not negatively impact the LDRD program at each of the labs this year and following years?

Answer. The Tri-Lab initiative does not impact current small business contracts in New Mexico. Current laboratory small business contracts in New Mexico will continue through their contractually scheduled completion dates. Once completed requirements would be subject to competitive award. I expect the initiative to have a positive impact on future small business opportunities as current contracts with large business are awarded to small businesses.

In fiscal year 2005, the laboratories have been allowed to transfer funding for individual contract actions, thereby avoiding impact on LDRD funding. Minimizing or avoiding any impact on LDRD programs in fiscal year 2006 and beyond is being addressed as part of planning for further implementation of the Tri-Lab initiative in fiscal year 2006. The NNSA is actively working with the laboratories to identify alternative funding mechanisms. I am confident that accounting system issues associated with LDRD accruals in future years will be adequately addressed to avoid negatively impacting LDRD programs at each of the labs.

*Question 5.* Mr. Secretary, I understand that DOE is last among federal agencies in terms of compliance with the small business contracting goals set by the Administration. I also recognize this is a result of policy that prohibits the Department from counting small business sub contracts let by the M&O contractors.

To address this shortfall, NNSA has proposed an initiative to take \$100 million in procurement from each of the three NNSA labs and bundle them to be offered by either the Albuquerque Service Center or Headquarters.

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It is likely to impact the labs through a reduction in LDRD funding and may reduce NNSA mandated small business goals negotiated by each lab.

This program is ill conceived and poorly executed as the procurement targets have varied widely as have the goals and terms proposed by NNSA.

I am aware that the Department has negotiated a one-year grace period in which to achieve this goal.

Do you believe that M&O subcontracts to small businesses should be included in the Department of Energy's overall small business procurement calculation?

Answer. Yes, including M&O subcontracts in the overall small business procurement calculation would provide a more accurate portrayal of the total level of small business contracting accomplished within the NNSA budget expenditures.

I do not think the current small business procurement calculation is the right way to calculate accomplishments. Because of the manner in which NNSA achieve their program mission accomplishment, the vast majority of the NNSA budget is spent on, and through, the Administration's unique management and operating contract arrangements. Small Business goals are predicated on proposing a "goaling" that is based on realistic opportunities for Small Business concerns. The operation of our National Laboratories and Nuclear Weapons Plants, for example, are not considered realistic opportunities for concerns that are classified as "small businesses."

#### PLUTONIUM DISPOSITION

*Question 6.* Mr. Secretary, I am pleased that the Administration has been able to resolve the internal debate over liability associated with the Plutonium Disposition program and has made an offer to the Russians. As I understand it, the U.S. and Russian delegates are continuing their negotiations in good faith. I remain cautiously optimistic that this matter will be resolved in the near term.

Unfortunately, this inaction has led to [a] year long delay to the program. I have received a letter from you, Mr. Secretary, explaining that the project will not meet the MOX production goal of January 2009. The letter explained that the NNSA must restructure the project schedule and funding requirements.

Can you please provide the Committee with an update as to the status of the liability negotiations and the new timetable for the MOX fuel project?

Answer. Although the start of construction of the U.S. and Russian mixed oxide (MOX) facilities has been delayed due to the liability issue with Russia, I am optimistic that the issue will soon be resolved and that site preparation will begin in FY 2005 and full construction will begin in FY 2006.

In late January, we submitted a potential path forward to the Russians. We have had high-level meetings in Moscow on February 17 and 18 and March 21 and 22, 2005, and we are hopeful that this issue will be resolved before President Bush and President Putin meet again in early May.

*Question 7.* Mr. Secretary, I am pleased that the Administration has been able to resolve the internal debate over liability associated with the Plutonium Disposition program and has made an offer to the Russians. As I understand it, the U.S. and Russian delegates are continuing their negotiations in good faith. I remain cautiously optimistic that this matter will be resolved in the near term.

Unfortunately, this inaction has led to [a] year long delay to the program. I have received a letter from you, Mr. Secretary, explaining that the project will not meet the MOX production goal of January 2009. The letter explained that the NNSA must restructure the project schedule and funding requirements.

Will the delays affect the FY 2006 budget request?

Answer. Construction of the U.S. and Russian MOX facilities has been held up over a disagreement over liability for U.S. work performed in Russia. We are currently negotiating this issue with Russia and hope to have a resolution within the next few months.

As a result, DOE is currently planning to begin full construction of both the U.S. and Russian MOX facilities in FY 2006 and has asked for \$339M for the U.S. MOX facility construction in the FY 2006 budget request.

These funds will be essential to place large construction contracts and begin equipment procurements to support the start of construction at the Savannah River Site. Any significant cut in this request will prevent the program from putting in place these critical contracts and will delay the start of operations of the MOX facility.

#### NUCLEAR POWER 2010

*Question 8.* The Nuclear Power 2010 program was conceived to be a cost sharing arrangement between the department and utilities to test the still untested licensing process for new plants in our country. I have real concerns regarding what I see as a pattern of "foot-dragging" in the leadership of the NP 2010 program. Last year in November, awards we made to two energy utility consortia's—those monies have not yet been disbursed. I understand some changes have been made in the membership of the consortia and this needs to be reflected in the final agreements with the department. However, we are into our fifth month since the awards were announced by the department. Will you give me your assurance that you will use your vast knowledge of best corporate practices and move the cooperative agreement process between the department and utility consortia to conclusion in the very near future? We have real momentum for the first time in three decades on the course of new plants, I would be dismayed to think our own Department of Energy is the major impediment at the beginning of this historic process.

Answer. The Department is moving with diligence to issue the Nuclear Power 2010 cooperative agreements and associated FY 2005 funding to the industry. It is our firm desire to keep the momentum on new nuclear plants progressing toward deployment.

The Dominion Energy decision to change its selected reactor technology to the General Electric ESBWR design caused the Department and industry to re-evaluate project cost, cost share, and annual funding in both the Dominion Energy and NuStart projects. This is due in part to the fact that the GE ESBWR reactor design is part of both projects. In addition, NuStart requested additional FY 2005 funds to accelerate the Westinghouse AP-1000 work scope. Both of these conditions required re-submittal of detailed cost information by both reactor vendors to the Department. In addition, intellectual property rights terms and conditions required complex and lengthy negotiation with the reactor vendors. The Department reached agreement on the terms and conditions for the cooperative agreements during the week ending March 11, 2005. Dominion signed and accepted the cooperative agreement on April 4, 2005 while NuStart is expected to sign in late April 2005.

*Question 9.* What do you see as the three main issues facing U.S. generating companies who might wish to build new nuclear plants?

Answer. The most important issues facing power companies in the U.S. that are considering building new nuclear power plants include:

- **Licensing and Commissioning Uncertainty**—The Nuclear Regulatory Commission (NRC) licensing process, 10CFR Part 52, for siting, building and operating new nuclear power plants has never been previously used or demonstrated. This licensing process needs to be exercised to assure power companies the regulatory process is effective and efficient. In addition, there remains uncertainty whether this new NRC “one-step” licensing process could be contested in court through intervention after the plant has been completed and prior to beginning operation, potentially leading to long and costly delays.
- **Financial Uncertainty**—The cost and duration to build a new nuclear power plant in the United States is unclear. Some power companies are interested in Generation III+ advanced light water reactor designs that have the potential to offer improvements in economics and safety over existing designs. These reactor technologies have never been built before and engineering remains to be completed. In addition, there is some uncertainty regarding how long these designs will take to construct. Reactor vendors estimates have been evaluated by construction companies but as of yet have not been built in the United States.
- **Uncertainty on Disposition of Spent Nuclear Fuel**—Power companies do not expect the spent nuclear fuel disposition issue to be resolved prior to building new nuclear power plants, however a clear disposition path and progress on that path needs to be clearly evident before power companies would likely make a build decision.
- **Accident Indemnification**—Renewal of Price-Anderson accident indemnification law is required by power companies before new nuclear plants would be built in the U.S.

*Question 10.* The President said last Wednesday, February 23, in Germany that he believed building more nuclear power plants in the U.S. would help the country cut its dependence on foreign sources of energy. Do you believe DOE is providing enough support to achieve this objective?

Answer. The Department is providing the support necessary to deploy new nuclear power plants in the United States. For instance, through the Department's Nuclear Power 2010 program, we will continue to partner with private industry, with the goal of demonstrating the untested NRC regulatory processes for siting, constructing and operating new nuclear power plants. Three Early Site Permit demonstration projects are underway with site approval applications under consideration by the NRC. Approval of these three sites is expected in 2006. The Department is also supporting demonstration of the combined Construction and Operating License (COL) process under cooperative projects with Dominion Energy and NuStart Energy consortia. These COL demonstration projects will develop applications for and obtain NRC approval for at least two COLs. In addition, two advanced standardized reactor designs, the Westinghouse AP1000 and the General Electric ESBWR will be certified and the first of a kind engineering completed as part of these projects.

In addition, looking further into the future, the Department's Generation IV Nuclear Energy Systems program is making progress in developing advanced nuclear energy technologies aimed at producing emissions-free, cost-competitive electric power and hydrogen.

With these and other important activities, we believe the Department is paving the way for a vibrant and substantial nuclear energy future.

#### HYDROGEN

*Question 11.* What are DOE's plans and schedule for developing nuclear plant production of Hydrogen as a transportation fuel?

Answer. As part of the President's Hydrogen Fuel Initiative, the Department's Nuclear Hydrogen Initiative will conduct research and development on enabling technologies and demonstrate hydrogen production processes that are compatible with nuclear energy systems. This research plans to progress through successively larger-scale experiments until 2017, when the program expects to operate a nuclear hydrogen production plant capable of producing hydrogen at a cost competitive with other transportation fuels. This research is closely coordinated with the research and development activities of the other DOE Hydrogen Program offices—Energy Efficiency and Renewable Energy, Fossil Energy, and Science—and with the Generation IV Nuclear Energy Systems Initiative.

Major accomplishments expected in FY 2006 for the Nuclear Hydrogen Initiative include:

- Complete thermal optimization and characterization of the sulfur-iodine thermochemical cycle and high-temperature electrolysis laboratory-scale experiments.

- Complete flowsheets, economic analyses, and system designs for laboratory-scale experiments of high-potential alternative thermochemical cycles.
- Complete initial assessment of codes and standards applicable to a hydrogen production facility coupled to a nuclear reactor.

*Question 12.* What is the impact on natural gas prices and the environment of moving to a hydrogen economy?

Answer. There are many different future scenarios for a hydrogen economy with many different potential impacts on natural gas prices and the environment.

On the environment: A hydrogen economy will improve criteria emissions since hydrogen use is so clean (especially when used in a fuel cell). The impact on CO<sub>2</sub> emissions depends on how the hydrogen is produced. The Department of Energy is emphasizing technologies that will produce hydrogen from domestic resources with low CO<sub>2</sub> emissions. These include use of coal with carbon capture and storage, renewable energy, and nuclear technologies. Use of natural gas without carbon capture and storage (likely in the early phase of a hydrogen transition) would have a more-or-less neutral effect on CO<sub>2</sub> emissions.

On natural gas prices: This is also highly dependent on future hydrogen scenarios. Also, there is a natural feedback between natural gas prices and technology choice. For example, if there is competition between using coal with carbon capture and storage or natural gas with carbon capture and storage, higher gas prices would tend to favor the use of coal. In the early stages of transition to a hydrogen economy, there would be a switch from petroleum use to natural gas use and this would tend to have a downward influence on crude oil and petroleum product prices and an upward influence on natural gas prices. However, as advanced technologies for producing hydrogen are introduced, there could be a significant downward influence on natural gas prices. For example, the development of coal technologies to produce both hydrogen and electricity could bring about less use of natural gas (and lower natural gas prices) as this technology would become more competitive in the electric power sector.

In summary, any specific answer to this question would depend on the path of future hydrogen development that can not be predicted with any reliability. What can be said is that the Department of Energy is emphasizing technology development that will result in the production of hydrogen from low-emission and domestic energy resources especially emphasizing renewable energy, clean-coal technologies, and nuclear technologies. A hydrogen economy based on these technologies would significantly reduce criteria emissions and CO<sub>2</sub> emissions and would tend to reduce gas use (and therefore gas prices) in the electric power sector.

#### NUCLEAR ENERGY

*Question 13.* In the President's Budget Request, there is \$1 million for the National Academy of Sciences to undertake an evaluation of the Office of Nuclear Energy's research programs.

What can you tell me about this request, in detail?

Answer. The FY 2006 Budget requests funding for the National Academy of Sciences, to undertake a comprehensive, independent evaluation of the nuclear energy program's goals and plans, and to validate the process for establishing program priorities and oversight (including the method for determining the relative distribution of budgetary resources). The evaluation will result in a comprehensive and detailed set of policy and research recommendations and associated priorities (including performance targets and metrics) for an integrated agenda of research activities that can best advance NE's fundamental mission of securing nuclear energy as a viable, long-term commercial energy option to provide diversity in energy supply. An interim evaluation will be completed in time to inform NE's 2008 budget planning, with a final report completed before May 2006.

The budget request for Environmental Management is cut by half a billion dollars. The budget justification for this reduction cites that the clean-up work at Rocky Flats and Fernald is set to be completed soon.

*Question 14.* Are these two sites going to be cleaned up this year? Are they on schedule? Would you say these are success stories for the program?

Answer. Funding in the FY 2006 budget request will allow Rocky Flats and Fernald to remain on track toward project completion and site closure in 2006. Rocky Flats and Fernald are just two examples of success stories resulting from EM's accelerated risk reduction and site closure initiative.

With respect to the Rocky Flats success story, EM is on schedule to complete the safe cleanup and closure of an entire former nuclear weapons production site. Early forecasts estimated that it would take more than 60 years and \$37 billion to complete a site closure. In implementing a reformed EM cleanup program, the Rocky

Flats site is now on track to be finished in 2006, at a total cost of approximately \$7 billion. When the cleanup is completed, in which more than two million 55-gallon drums equivalent of radioactive waste materials will have been removed, the site will be transitioned to a National Wildlife Refuge under the auspices of the U.S. Fish and Wildlife Service, turning the 16,000+ acre reserve from a perceived public liability to a public asset.

Fernald is also an example of EM's success in safely accelerating risk reduction and site closure. In FY 2000, Fernald's site closure date was projected to be 2009. As the project progressed through the early phases of decontamination and demolition of the former uranium processing operations, EM and its contractor reassessed the cleanup goals of the site. As a result of reforms implemented at the Fernald site, in June 2003, the project was restructured to be completed by 2006. The Fernald Closure Project is on track toward project completion and site closure in 2006, if we are able to disposition the wastes in Silos 1 and 2. We continue to work on a path forward for these wastes. When completed, much of the 1,050-acre Fernald will be transitioned to a public nature preserve.

This budget number reflects the Administrations goal of having 31 sites remediated by 2025. After 2025, 6 sites will require further remediation work.

*Question 15.* What are those six sites? What are their projected cleanup dates?

Answer. As of the end of FY 2004, the Department had completed cleanup of 76 of 114 contaminated sites. By the end of 2025, the Department's goal is to complete cleanup of an additional 32 sites, bring the total number of DOE sites completed to 108 out of 114.

After 2025, five sites will remain to be completed. The five sites and their planned completion dates are listed below.

Site	Projected year of completion
Nevada Test Site .....	2027
Tonopah Test Range Area .....	2027
Idaho National Laboratory .....	2035
Waste Isolation Pilot Plant .....	2035
Hanford (Richland and Office of River Protection) .....	2035

In addition, we have not finalized the scope of the Paducah (sixth site) to 1confirm whether or not this will extend beyond 2025.

#### YUCCA MOUNTAIN

*Question 16.* You have testified that DOE's submission of the construction license application to the Nuclear Regulatory Commission which had been planned for December 2004 is now anticipated to take place by the end of calendar year 2005.

Are you confident that the Department will submit the license application in 2005?

Answer. We remain hopeful that EPA's work in promulgating the standard will be contemporaneous with our work on the license application and that both will be ready by the latter part of the year. We have a draft of the license application. We are making improvements to the analysis and presentation of information to meet our objective of completing preparation of a high quality license application by the end of this calendar year.

*Question 17.* What factors could jeopardize this schedule?

Answer. As you are aware, the schedule is dependent on external factors outside the Department's control, which can impact the program's ability to move forward. Two examples of these external factors are the finalization of the Environmental Protection Agency's radiation protection standard and securing adequate resources to support programmatic requirements.

*Question 18.* In particular, when would a draft revised radiation standard have to be issued by EPA for DOE to meet this schedule?

Answer. We remain hopeful that EPA's work in promulgating the standard will be contemporaneous with our work on the license application and that both will be ready by the latter part of the year. The timing of the issuance of a draft standard would need to be consistent with the finalization of the standard this year.

*Question 19.* Could legal or regulatory challenges to a revised EPA standard impact the timing of license application?

Answer. It is not expected that legal or regulatory challenges to a revised EPA standard will impact the Department's ability to submit the license application to the Nuclear Regulatory Commission.

*Question 20.* The FY 2006 budget request is significantly lower than forecast in last year's submission. To date, the Administration has not provided out-year projections for funding requirements for the project from 2007 and beyond. Does the Administration anticipate that funding requirements will increase dramatically for the program in FY 2007 following submission of the license application?

Answer. The Administration anticipates that funding requirements will increase dramatically for the program in FY 2007 following a submission of the license application. The Department recently provided two illustrative ten-year funding profiles to various Congressional Committees that estimated the total amount of funds that are needed for the program from Fiscal Year 2006 through the opening of the repository. Both estimates were approximately \$12.5 billion. Those are preliminary profiles subject to revision, and do not necessarily represent the policy of the Administration. It should be noted that if adequate and timely funding is not provided the program's schedule and costs will be significantly impacted.

*Question 21.* To what extent is the ability to increase program funding within constrained overall budgets dependent on reclassifying the way that the Nuclear Waste Fund is scored in the budget process?

Answer. The program needs stable and sufficient long-term funding to implement our Nation's radioactive waste management policy. The current procedure used to score Nuclear Waste Fund revenues does not encourage the appropriation of the full amount of the fees received annually because the receipts do not directly offset the appropriation for the repository program. Reclassification of the annual receipts into the Nuclear Waste Fund addresses this issue. The Administration remains interested in pursuing an alternative funding mechanism for the repository program. Schedules and cost estimates for the repository program do assume stable and adequate funding. Without a change to the funding mechanism program funding shortfalls are likely. Such shortfalls, in turn, will cause significant delays in repository construction and eventual operations threatening the very existence of the repository.

*Question 22.* The FY 2006 request includes an increase of nearly \$55 million for project Transportation activities including completion of the rail alignment EIS, issuing a contract for Nevada rail, and continued work on cask and railcar design and certification. For many years, transportation activities have been deferred as budgets were reduced from the Administration request.

How critical are these activities to maintaining program schedules and what would be the impact if this funding was not provided in FY 2006?

Answer. Developing the capability to accept and transport spent nuclear fuel and high-level waste to repository facilities is a critical activity as the Department moves forward. Transportation activities, such as developing the Environmental Impact Statement for the rail line and engaging States in transportation planning activities, have begun in earnest. A reduction in funding will likely impact our ability to implement a key element of the waste management system.

#### YUCCA MOUNTAIN

*Question 23.* It was reported in the Press on late Tuesday that a senior official with the department said that the repository wouldn't be open until the 2012-2017 time-frame. Director Chu who recently left the program said that the repository would open in the 2012 time frame. There are 66 law suits by utilities pending against the department; one has been settled for \$300 million until 2010. The department and the federal treasury according to a February 14 article in the LA Times said that by some estimates, the federal government could bear penalties and costs of \$60 billion if Yucca Mountain is never built.

What is the correct timeframe for the repository to open? Can you provide to the committee an estimate or even your best guess on what all the lawsuits may cost the federal government if the repository doesn't open until 2017?

Answer. The 2010 deadline is no longer feasible. As we indicated in last year's testimony, if the program did not receive its full request of \$880 million, it would be unable to meet the goal of beginning waste acceptance in 2010. As you know, we did not receive the full funding amount and so now we are re-evaluating the program's schedule. The Department's efforts in this area are complicated by the Court's remand of the 10,000-year time period in the Environmental Protection Agency's radiation protection standard and by the ongoing need for stable funding. We also need predictable and adequate program funding to allow access to the funds provided by the utilities, and the ability to start construction of various non-nuclear

facilities prior to construction authorization. When these issues are resolved, we will then be in a position to establish a better estimate for opening the repository.

As we have not yet developed a firm schedule for the opening of Yucca Mountain, the Department has not yet developed an updated estimate of the potential liability to which the government may be exposed as a result of the delay in spent fuel acceptance. Our prior estimate of \$2 to \$3 billion was based upon beginning receipt at Yucca Mountain in 2010. The utilities have estimated that they might incur additional costs for each year of delay beyond 2010, and they will likely seek compensation from the United States in litigation. The courts have not yet determined federal government liability, but the potential exposure could be in the billions.

#### CLEAN COAL TECHNOLOGY/FUTUREGEN

*Question 24.* Mr. Secretary, in reviewing the Fossil Energy aspects of the DOE Budget, it is clear that the priority focus is on promoting clean coal and carbon sequestration efforts.

Would you please tell us about the progress made so far under the Clean Coal Power Initiative and FutureGen programs, and what the level of industry participation has been like in FutureGen?

Answer. There is indeed priority being placed within the Coal Program to develop clean coal technology options that would eliminate the environmental concerns associated with the use of coal, our most abundant, low cost energy resource. The Clean Coal Power Initiative (CCPI) and the FutureGen initiative, together with the base coal R&D program, have near-, mid-, and long-term goals to that end. Five out of six CCPI Round 1 projects have commenced and one is still under negotiation. Four CCPI Round 2 projects were recently selected and awards are currently being negotiated.

The success we have had over the last 30 years in developing our present clean coal technology base (through basic research, CCT and CCPI programs), has now allowed us to reach for what was unimaginable 30 years ago-zero emission coal technology.

The 30 years of research, in partnership with industry and academia, have allowed us to embark on the FutureGen initiative, which aims to establish the technical and economic feasibility of essentially zero emission plants. U.S. utilities and coal producers representing over 20% of U.S. coal-based electricity generation and over 40% of U.S. coal production have formed a consortium-the FutureGen Alliance-and pledged \$250 million in cash to pursue the project as a public/private partnership. Negotiations between DOE and the Alliance are underway to finalize the cooperative agreement to pursue the project. There has also been an outpouring of support from State governments for FutureGen.

*Question 25.* What reasons supported the decision to reduce funding by 20% for the new Office of Electric Transmission and Distribution? Have the goals of that office changed?

Answer. The FY 2005 comparable appropriation of \$120.2 million reflects the merger of the Office of Energy Security and Assurance into the Office of Electric Transmission and Distribution (OETD), consistent with the funding Congress provided in the Consolidated Appropriations Act, 2005. Approximately \$19.3 million of OETD's FY 2005 appropriation is for activities of the former Office of Energy Security and Assurance.

The FY 2006 budget request of \$95.6 million is a 19 percent reduction to the FY 2005 enacted level for these programs. However, the FY 2005 enacted level includes \$51 million in Congressionally-directed activities. When the FY 2005 level is adjusted for this, the FY 2006 President's request reflects a slight increase.

#### OIL AND GAS R&D TERMINATION

*Question 26.* How will termination of the oil and gas technology program affect progress made by private companies in these areas?

Answer. Much of the Department's oil and natural gas research and development is jointly funded by industry and the government. It was determined that the industry has the capacity to pursue this research, especially in light of the current strong economic performance of the industry.

#### FOSSIL ENERGY

*Question 27.* The U.S.-China Energy and Environmental Center was zeroed out. What did that program do? Is there another program at DOE or another agency that promotes cooperation between the U.S. and China on energy and environmental challenges?

Answer. The U.S./China Energy and Environmental Technology Center works to facilitate the export of American goods and services to China's growing power industry, with its focus on increasing the market share of U.S. clean coal technologies.

The 2006 Budget provides \$1 million for International Program Support, with activities including enhancing the expansion of cleaner energy technology power systems in the Pacific Rim. The 2006 Budget also provides \$1 million for Coal Technology Export, which works to facilitate the development and deployment of Zero Emissions Technologies for fossil fuels internationally, with partnerships to advance environmental protection by promoting deployment of cleaner energy power systems.

#### CLEAN COAL TECHNOLOGY/FUTUREGEN

*Question 28.* Mr. Secretary, it is clear to me that the nation will rely more on our vast coal resources not just for the generation of electricity but potentially for natural gas substitutes and even diesel fuel.

Would you please explain to the Committee how the Clean Coal Technology program and the FutureGen program will help us meet our energy needs in the short, mid- and long-term?

Answer. The Clean Coal Technology program is a government and industry cofunded effort to provide technical and operational data of innovative coal technologies demonstrated at commercial scale. Beginning in 1985, the Department administered five competitive solicitations selecting projects with the potential to satisfy the requirements of the energy markets while improving the environmental performance of coal based technologies. To date, more than thirty projects have been successfully completed, providing the marketplace with valuable performance experience and data for a variety of applications.

The Fiscal Year 2006 budget supports the Department's continuing effort to fulfill President Bush's 10-year, \$2 billion commitment to clean coal research, with funding for the President's Coal Research Initiative (CRI) of \$286 million, a \$13 million increase over the 2005 enacted level. The 2006 Budget brings the total requested funding for clean coal research to \$1.6 billion over five years, on pace to exceed the President's ten-year pledge by more than 50 percent.

The coal research program provides a balanced portfolio that focuses on near-, mid- and long-term goals. In the short term, the Clean Coal Technology program is developing affordable environmental technologies, such as mercury controls, for both existing and new coal-fired power plants. For the mid-term, the program is advancing much cleaner, more efficient options for new power plants, such as gasification-based and advanced combustion technologies. In the long-term, the program is working towards zero emissions, high efficiency power plants—with low-cost carbon sequestration—as embodied in the research goals of the President's FutureGen Initiative.

The FutureGen program aims to establish the capability and feasibility of co-producing electricity and hydrogen from coal with essentially zero emissions, including carbon sequestration and gasification combined cycle, both integral components of the coal-fueled power plant of the future. The co-production of hydrogen will also support the President's call to create a hydrogen economy and fuel pollution free vehicles.

The clean coal technologies and FutureGen support America's long-term energy security and meet our future energy needs by advancing technologies that can use coal, our most abundant low-cost domestic energy resource, cleanly, efficiently and affordably.

*Question 29.* Mr. Secretary I am also very concerned about our existing generating plants. At the moment the U.S. gets just over half of its electricity from coal fired power stations. Many of those plants are nearly three decades old.

What role do you envision the Department playing in efforts to replace or re-power our existing fleet of coal-fired power plants?

Answer. The principal Departmental goal guiding research into coal power is the following: Create public/private partnerships to provide technology to ensure continued electricity generation and hydrogen production from the extensive U.S. fossil fuel resource, including control technologies to permit reasonable-cost compliance with emerging regulations, and ultimately, by 2015, zero emission plants (including carbon) that are fuel-flexible, and capable of multi-product output and energy efficiencies over 60 percent with coal and 75 percent with natural gas.

The technology options include:

- Emission control technology that can be retrofitted to existing plants or can be used on replacement plants.

- New, clean and efficient electricity generation technology, such as integrated gasification combined cycle (IGCC) that can be used to repower or replace existing power plants.
- And, in the long-term, development of essentially zero emission technology (such as FutureGen) that could replace existing plants as well as be used for new capacity additions.

As part of this development effort and to accelerate the commercial introduction of these technologies, the Department has competitively and on a cost-shared basis, partnered with industry to demonstrate these technologies on a commercial scale under the Clean Coal Power Initiative.

Recently, under this initiative, two IGCC and two mercury and other pollutant control technologies were selected for demonstration.

*Question 30.* I realize that it is difficult to see very far into the future of the federal budget. But my colleagues and I are very concerned that new coal related technology is developed and deployed as rapidly as possible.

Can you assure us that the Department is committed to full and long term support for the development and deployment of new clean coal technologies?

Answer. I can assure you that the Department is committed to full and long term support for the development and deployment of new clean coal technologies. We consider clean coal as a vital and strategic, low-cost domestic resource needed to ensure the Nation's future energy security. The Department would also like to see advanced coal related technologies developed and deployed as rapidly as possible so that we can realize the public benefits from their investment. The path to success is to pursue a diverse coal research portfolio of technologies. In that regard, our coal research program focuses on advanced clean coal technology development that progresses from fundamental to applied research and eventually to the point of demonstration.

The coal research program provides a balanced portfolio that focuses on near-, mid- and long-term goals. For the short term, the coal research program is developing affordable environmental technologies, such as mercury controls, for existing coal-fired power plants. For the mid-term, the program focuses on advancing much cleaner, more efficient options for new power plants, such as gasification-based and advanced combustion technologies. In the long-term, the program is working towards zero emissions, high efficiency plants—with low-cost carbon sequestration—as embodied in the research goals of the President's FutureGen Initiative.

*Question 31.* I realize that it is difficult to see very far into the future of the federal budget. But my colleagues and I are very concerned that new coal related technology is developed and deployed as rapidly as possible.

Can tell us briefly how the Department views the path to success in this regard?

Answer. The Department would also like to see advanced coal related technologies developed and deployed as rapidly as possible so that we can realize the public benefits from their investment. The path to success is to pursue a diverse coal research portfolio of technologies. In that regard, our coal research program focuses on advanced clean coal technology development that progresses from fundamental to applied research and eventually to the point of demonstration. These demonstrations are conducted through the competitive Clean Coal Power Initiative where our industry partners must cost share at least 50 percent of the funding. This partnership investment is one of the key indicators of industry's commitment to deploying the technology. In addition, partners selected under the CCPI program must submit a commercialization plan to get the technology into the market place. Finally, there is a repayment provision on the government's investment through the commercial sale of the technology.

The coal research program provides a balanced portfolio that focuses on near-, mid- and long-term goals. For the short term, the coal research program is developing affordable environmental technologies, such as mercury controls, for existing coal-fired power plants. For the mid-term, the program focuses on advancing much cleaner, more efficient options for new power plants, such as gasification-based and advanced combustion technologies. In the long-term, the program is working towards zero emissions, high efficiency plants—with low-cost carbon sequestration—as embodied in the research goals of the President's FutureGen Initiative.

*Question 32.* The President has stated that his administration is committed to reducing Carbon emissions significantly through voluntary processes and through rapid development of new technologies to control not only Carbon, but the criteria air pollutants—SO<sub>x</sub>, NO<sub>x</sub>, and Mercury.

- In addition to its research on Sequestration, what other efforts does the Department have underway to promote cleaner use of all forms of energy?

Answer. DOE supports these efforts that promote cleaner use of all forms of energy, not just coal:

**Clear Skies Initiative:** In 2002, President Bush first proposed “Clear Skies” legislation, a multi-pollutant legislative proposal to reduce emissions of sulfur dioxide, nitrogen oxides, and mercury from electricity generators, and to improve air quality throughout the country. Using a proven, market-based approach, Clear Skies would cut emissions of pollutants from electric utilities by nearly 70 percent when fully implemented. This historic proposal will bring cleaner air to Americans faster, more reliably, and more cost-effectively than under current law. Although Clear Skies is the preferred approach, the administration is pursuing a regulatory path to achieve many of the same health and clean air benefits. This approach includes the Clean Air Interstate Rule, the Clean Air Mercury Rule, EPA’s Clean Diesel rules, and other clean air programs.

**Clean Air Interstate Rule:** DOE collaborated with EPA in the development of the final Clean Air Interstate Rule (CAIR), a rule that will ensure that Americans continue to breathe cleaner air by dramatically reducing air pollution in 28 eastern states. By 2015, CAIR will provide health and environmental benefits valued at over 25 times the cost of compliance. CAIR will permanently cap emissions of sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) in the eastern United States. When fully implemented, CAIR will reduce SO<sub>2</sub> emissions in 28 eastern states and the District of Columbia by up to 70 percent and NO<sub>x</sub> emissions by over 60 percent from 2003 levels.

**Reduction in Diesel Emissions:** In May 2004, the Bush Administration finalized a rule that will dramatically reduce pollution from heavy-duty diesel engines used in construction, agricultural, and industrial equipment. Soot and NO<sub>x</sub> emissions from diesels will decrease by more than 90 percent by mid-2014, and the sulfur content of diesel fuel will be cut 99 percent by mid-2014. EPA has finalized new emission standards for non-road diesel engines used in construction, agricultural, and industrial operations. EPA also is proposing a more than 99 percent reduction in the sulfur content of fuel used by these engines. The proposed emission standards would achieve a reduction in particulate matter (PM) and nitrogen oxide (NO<sub>x</sub>) levels of more than 90 percent. This will significantly improve the air quality for Americans nationwide.

**Mercury Emissions:** On March 15, EPA issued the first-ever federal rule to cap mercury emissions from coal-fired power plants. This rule makes the United States the first country to regulate mercury emissions from coal-fired power plants. When fully implemented, these rules will reduce utility emissions of mercury by nearly 70 percent.

**Tax Incentives for Renewable Energy and Hybrid and Fuel-Cell Vehicles:** The President has called for tax incentives totaling \$3.6 billion through 2010 to spur the use of clean, renewable energy, and energy-efficient technologies, such as hybrid and fuel-cell vehicles, residential solar heating systems, renewable energy produced from landfill gas, wind, or biomass, and efficient combined heat and power systems.

**Climate Change:** President Bush has committed America to meeting the challenge of long-term global climate change by reducing the ratio of greenhouse gas emissions to economic output by 18 percent by 2012 compared to 2002. To support this commitment, the Bush Administration is carrying out a comprehensive, innovative program of domestic and international initiatives to:

- (1) Improve our understanding of the science of climate change. The President’s FY 2006 budget includes \$181 million for the Climate Change Research Initiative (CCRI), a –\$36 million decrease from 2005. The CCRI focuses on reducing significant uncertainties in climate science, improving global climate observing systems, and developing resources to support policymaking and resource management.

- (2) Encourage near-term voluntary and cost-effective emissions reductions. In February 2003, President Bush announced that leading firms from 12 major industrial sectors and the membership of the Business Roundtable have committed to work with four Cabinet agencies (DOE, EPA, DOT, and USDA) to reduce greenhouse gas emissions in the next decade. Participating industries included America’s electric utilities; petroleum refiners and natural gas producers; automobile, iron and steel, chemical and magnesium manufacturers; forest and paper producers; railroads; and the cement, mining, aluminum, and semiconductor industries.

- (3) Develop transformational energy technologies to substantially reduce greenhouse gas emissions in the longer term. The United States is spon-

soring, with international and private-sector partners, a \$1 billion, 10-year demonstration project to create the world's first coal-fueled, near-zero-emissions electricity and hydrogen power plant (FutureGen). This project is designed to dramatically reduce air pollution and capture and store greenhouse gases. Through the President's Hydrogen Fuel Initiative, the first car driven by a child born today could be powered by pollution-free fuel cells that emit no greenhouse gases.

(4) Build international partnerships with developed and developing nations alike in a global, long-term effort to work on climate change issues.

Control technology research: The Office of Fossil Energy conducts a broad research and development program to develop cleaner, more efficient, and less expensive technologies to produce electric power from coal. Under the Innovations for Existing Plants program, the Department is developing advanced pollution control technologies for mercury and NO<sub>x</sub>, improvements in power plant by-product (ash and scrubber sludge) recycling, and technologies to reduce power plant water consumption.

This office also conducts R&D on advanced power cycles such as Integrated Gasification Combined Cycle (IGCC), which have the potential to dramatically reduce air pollution and water consumption from coal-fueled electricity generation plants, and which are considered more amenable to carbon capture than conventional power systems.

DOE/Fossil Energy also manages the Clean Coal Power Initiative (CCPI), a program to demonstrate, at commercial scale, advanced environmental control technologies for power plants, and advanced low emitting power plants.

#### CLEAN COAL EMISSIONS RESEARCH

*Question 33.* Can you explain for the Committee what the Department's objectives are with respect to this research and what steps you will take to move sequestration technologies toward commercialization?

Answer. Our aim is to have technologies which are safe, effective and economical by 2015. We believe that these technologies may be able to prevent hundreds of millions of tons of carbon from entering the atmosphere. Our cost goal is to achieve technologies which can be done at \$10 per ton of carbon. I should emphasize that, although we do not have these technologies available today, the research in this area is very promising. We need aggressive R&D to realize our goals. For example, we intend to continue extensive sequestration field testing to demonstrate the effectiveness of this technology.

*Question 34.* What are your expectations regarding the amount of time that will be needed beyond the coming fiscal year?

Answer. As stated in our last answer, our aim is to have technologies which are safe, effective and economical by 2015. We believe that these technologies may be able to prevent hundred of millions of tons of carbon from being released to the atmosphere. Our cost goal is to achieve technologies which can be done at \$10 per ton of carbon. I should emphasize that, although we do not have these technologies available today, the research in this area is very promising. We need aggressive R&D to achieve our goals.

Mr. Secretary, a number of organization involved in energy efficiency issues express concern about the development of some of the Department's energy efficiency standards. Given the need for all to use energy more efficiently it strikes me that worthwhile standards for appliances and other equipment should be developed as expeditiously as possible.

*Question 35.* What plans might be under consideration that would accelerate energy efficiency standards?

Answer. The delays experienced in the completion of the Department's priority efficiency standards rulemakings are of concern to me. They have been caused by a number of factors, including the many complex analyses required by the governing statutes and DOE's commitment to involve stakeholders during all stages of the standards development process. I have directed that we accelerate those parts of the standards-setting process that are within our control. The Department takes its rulemaking responsibilities seriously, and we will work to accelerate the standards setting process.

#### OFFICE OF SCIENCE

*Question 36.* Mr. Secretary, I am disappointed to see the President's budget would decrease finding [sic] to the Office of Science by nearly 4 percent. The Office of Science is the largest source of government support for research in the physical

sciences. Although we are clearly in a period of budget constraints, I question whether cuts in physical science research are in the long-term interests of the United States.

The Office of Science budget request also reflects a higher priority placed on operating funds for scientific user facilities than on grants to researchers. In fact, the Office of Science budget proposes a 10 percent cut for research grant funding overall. What are the reasons for the larger cuts in research grant programs relative to user facility operating funds? Do you expect this trend to continue in future years?

Answer. After congressionally-directed projects, several of which are unrelated to the Office of Science mission, are excluded from the FY 2005 appropriation, the overall decrease for the Office of Science in the FY 2006 request is 1.6%. In this overall budget climate, and considering the President's commitment to cut the deficit in half by the end of his term, I feel the Office of Science has been treated quite fairly in this budget. We are positioning the Office of Science for the future, with investments in new facilities needed to stay at the forefront of science. However, these investments in facilities and their operations have short-term consequences affecting our ability to fund research. Facility operations are not reduced as much as research in FY 2006 primarily because we have several new facilities coming on line. The Spallation Neutron Source at Oak Ridge National Laboratory will begin operations in FY 2006, as will 4 of the 5 Nanoscale Science Research Centers: the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory, the Center for Integrated Nanotechnologies at Sandia and Los Alamos National Laboratories, the Molecular Foundry at Lawrence Berkeley National Laboratory, and the Center for Nanoscale Materials at Argonne National Laboratory. The Spallation Neutron Source will provide the most intense-by an order of magnitude-neutron beam in the world for cutting-edge research, while the Nanoscale Science Research Centers will provide tools found nowhere else in the world for exploration at the atomic level, offering huge potential for the discovery of entirely new ways to build materials. Over the next several years, we will work to ensure that an appropriate balance between research and facility operations is maintained.

I feel strongly that, for the long-term benefit of our nation, we must achieve a greater parity between funding of the physical sciences and funding of other fields of science. For instance, medical science will depend upon basic research results from the physical sciences to continue to achieve the extraordinary advances for which we all hope.

Mr. Secretary, the President's budget provides \$259 million in total funding. Much of the basic research to support the hydrogen initiative is done through the Basic Energy Sciences (BES) program within the Office of Science. The budget proposes \$32.5 million for BES research to support the Hydrogen Fuel Initiative.

*Question 37.* Enormous gaps remain between our present technical capabilities in hydrogen production and storage, and the capabilities required for a competitive hydrogen economy. Given the need for basic research to generate breakthroughs, does the budget for the Hydrogen Fuel Initiative focus enough on basic research?

Answer. The Department recognizes the significant gaps between present technical capabilities and what would be required for a competitive hydrogen economy. The proposed budget request of \$32.5 million for basic research is commensurate with the targeted efforts, and it maintains an appropriate balance with the applied research and development efforts within the Hydrogen Fuel Initiative.

#### COAL RESEARCH INITIATIVE

*Question 38.* The President's budget proposes \$286 million for the Coal Research Initiative in FY06. This figure includes \$18 million for the industry cost-shared FutureGen program, to develop a zero-emission, coal-fired power plant capable of producing both electricity and hydrogen. Some of the technologies included in the FutureGen program, such as integrated gasification combine cycle systems, are relatively close to commercial readiness. The technologies needed for carbon capture and storage are less fully developed.

Does it make sense to apply the same cost-sharing provisions to all of the technologies included in FutureGen, regardless of their state of development?

Answer. No, FutureGen follows general cost-sharing guidelines similar to those applied to all our research activities and projects. For basic research, cost-sharing in the range of zero to 20 percent is sought from the participant. For applied research and development activities and projects the cost-sharing is in the 20 to 50 percent range. For demonstration projects such as in the Clean Coal Power Initiative the cost-sharing requirement is over 50 percent. Depending on the state of development of the technologies being tested in FutureGen, e.g., whether in a research

and development stage or demonstration, the cost-sharing follow the guidelines as applicable.

The President's funding request for Industrial Technologies is 56.5 million, a reduction of \$18.3 million from FY 05.

The Industrial Technologies Program seeks to reduce the energy intensity of the U.S. industrial sector through research, development, validation, and deployment of energy efficient technologies and operating practices. The current budget purposes to focus less on specific energy intensive industries—such as forest and paper products, metals, glass, and chemicals—than it has in recent years.

*Question 39.* Why does the Department propose to decrease energy efficiency efforts in specific, key industries that provide basic materials? Aren't these the industries that should be emphasized in energy conservation efforts, to maximize the return on our Federal investment?

Answer. Because industry is less likely to invest in R&D toward long term energy-savings technologies, our Industrial Technologies Program is focusing on a fewer number of higher-risk, higher-reward technologies, and our budget reflects that. Fortunately, the industrial sector of the economy is already quite energy efficient, since it has an economic incentive and the financial means to reduce energy use as a component of its overall cost of production.

*Question 40.* What are the consequences on U.S. commercial development and global competitiveness if High Temperature Superconductivity R&D is not funded adequately?

Answer. The President's FY 2006 request for High Temperature Superconductivity R&D supports a robust program. The consequence of a lower program level would be delay, or even loss, of the ability to develop advanced technologies needed to modernize and expand the Nation's electricity system. Higher capacity, efficient high temperature superconducting (HTS) power cables, transformers, generators and other equipment is now being developed to support the reliable, affordable electricity supply underpinning economic growth and security. Inadequate funding would cause a loss in the scientific and manufacturing leadership we now hold and would reduce participation by U.S. companies in serving the \$20 billion/year market for HTS power equipment estimated by 2020. Global competition from active HTS programs in Europe, Japan, China and South Korea is intense. For example, this year, Germany's Hannover Fair will feature a "Superconductivity City" special exhibit.

#### FUSION SCIENCES

*Question 41.* The request for Fusion R&D is up 6 percent to \$290 million overall. Funding for ITER, the international partnership to build a large-scale fusion reactor, is up \$50.6 million to \$56 million. I am concerned that as our financial obligations to ITER increase as the project moves forward that these increases not be offset by decreases in the overall budget for fusion science. Without a strong base for fusion science in the United States, we will bring little to the table to share with our partners as ITER moves forward.

I have no objection to participation in ITER, but only if the administration is serious about the commitment. I do not regard flat Science and Fusion Energy budgets as demonstrating serious commitment.

If our commitment for ITER is really \$500 million, our spending on this must ramp up in each of the next few years. When will we see a serious commitment for ITER wherein its budget does not jeopardize our Science Programs and other opportunities in fusion science?

Answer. The Total Project Cost for ITER as shown in the President's FY 2006 Budget is \$1.122 billion. The profile for the U.S. Contributions to ITER project, also shown in the FY 2006 Budget, does increase in the next few years. In the FY 2006 Budget, we are looking toward the future to assure that cutting edge research facilities will be available for the fusion community. As the Department develops its FY 2007 budget, we will pay close attention to the balance between the research and the facility development portions of the Fusion Energy Sciences program.

#### STRATEGIC PETROLEUM RESERVE

*Question 42.* How important is it to increase SPR capacity from the current 700 million barrel capacity to 1 billion barrels. What effect will such an increase have on our nation's import protection?

Answer. The Strategic Petroleum Reserve affords the nation strategic insurance against a severe energy supply disruption. It enhances the nation's energy security, economic security, and elements of national security and helps meet our international obligations. The effect expansion of the SPR would have on the nation's im-

port protection would depend on many variables including world oil demand and world oil supply.

#### SPR CONDITION

*Question 43.* Mr. Secretary, would you please comment on the current condition of the maintenance, exercises and testing that allow the SPR to maintain its operational readiness?

Answer. The SPR is fully operational and capable of delivering 4.4 million barrels of crude oil per day to the U.S. market with oil deliveries commencing as early as the 13th day after a Presidential finding that an emergency situation exists.

To ensure that their state of readiness is maintained, sites conduct routine and major maintenance, tabletop exercises to review procedures and checklists, inspection of facilities and equipment, training, and systems test exercises.

We have every confidence the SPR facilities at all four storage sites and all of our employees will be ready to draw down and sell our oil inventory in an orderly, safe and secure fashion in the event of direction from the President.

#### SPR BUDGET REDUCTION

*Question 44.* Additionally, I would be interested in your thoughts on how a 2.2 percent budget reduction in FY 2006 for the Strategic Petroleum Reserve would impact such readiness.

Answer. The small reduction in the FY 2006 budget from FY 2005 will have no impact on the high state of Strategic Petroleum Reserve readiness. The reduction is a result of a lower level of scheduled major maintenance projects from year to year and to the scheduled completion of oil fill activities during FY 2005.

The President's FY 2006 budget requests only \$500,000 for the DOE Hydropower program, a 90% decrease from FY 2005 funding levels. This funding will enable the Department to terminate the program and transfer the research, development, and demonstration results to industry.

DOE's Hydropower program is a joint program between DOE and the hydropower industry that began approximately 10 years ago with matching industry funds. The program has mainly focused on the Advanced Hydropower Turbine, which is designed to improve fish passage, increase hydropower project efficiency, and result in power output increases.

*Question 45.* It is my understanding that full scale testing has just begun on the Hydropower Program's Advanced Hydropower Turbine at the Wanapum Dam in Washington.

Why has the Administration recommended to cut the Department's hydropower budget by 90% in FY 2006 and to eliminate the program at the end of the Fiscal Year—particularly when testing at the Wanapum Dam is now underway?

Answer. The Department is fully funding this four year project to test a new design hydropower turbine at the Wanapum Dam. Field testing of the turbine is scheduled to complete early in the summer of 2005. FY 2006 activities will focus on analysis of test results, completing final reports, and distributing the information to industry. With the completion of these activities, the program will be complete, and no additional resources will be needed.

*Question 46.* Does the Department believe this Program has achieved useful results? Is Industry likely to continue this Program in light of DOE's withdrawal from it?

Answer. Yes. The hydropower program has achieved significant technical accomplishments in the area of turbine research. We believe that industry is well positioned to continue the Department's efforts at this point.

*Question 47.* Is DOE currently the only Federal agency engaged in researching hydropower's role as a low-cost, renewable, domestic source of clean energy?

Answer. The U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, Bonneville Power Administration, Western Area Power Administration, and Tennessee Valley Authority all conduct hydropower research activities.

#### POWER MARKETING ADMINISTRATIONS

##### MARKET-BASED RATE PROPOSAL

The President's FY 2006 Budget proposes a dramatic overhaul of the traditional PMA financing structure for the Southeastern Power Administration ("Southeastern"), the Southwestern Power Administration ("Southwestern"), the Western Area Power Administration ("Western"), and the Bonneville Power Administration ("Bonneville").

The President's Budget proposes that all of the PMAs, including BPA, phase in the use of market-based rates to their customers. The Administration seeks to end the alleged subsidy to preference customers and argues that this is not a proposal to privatize the PMAs. The Administration proposes that any rate increase be capped at 20% per year.

*Question 48.* As I understand the proposal, the cost of electricity sold from federal dams could increase as much as 20% per year until the rates are at an undetermined market level. Also, while the Administration claims these rate increases will be gradual, OMB's revenue assumptions show a 41% increase in revenues from the PMAs. Isn't it hard to have a "gradual" rate increase with that type of target? What does the Administration consider a "market rate" for electricity?

Answer. With the exception of BPA, the PMAs generally make up less than 5% of the power purchased by consumers in the areas they serve. Because of this relatively small proportion of electricity retailers' power the PMAs provide, even substantial increases in rates charged by WAPA, SWPA, and SEPA will have only a small affect on end users. The Administration is sensitive to the impact on end users and has stated that in no case would any household receive an increase of more than 20% in a year. While the Administration's proposal is projected to result in \$12.4 billion in Federal deficit reduction over the next ten years, the average consumer is expected to only see a slight increase in their power bill. In fact, preliminary estimates point to average annual increases far less than the proposed 20% cap—less than a 4% average annual increase over the six-year adjustment period for end users of the PMAs. This results in less than an eighty cents average increase in the total monthly power bill for PMA end users in 2006.

The Administration is continuing to work on drafting the legislative proposal discussed in the budget. Therefore, it would be premature for me to address how "market rates" will be set under that proposal.

*Question 49.* Has the Office of Management and Budget conducted any precise studies regarding the impact of raising electric rates in various electric markets?

Answer. No, only preliminary assessments using data from PMAs and Government Accountability Office studies have been made about the potential impact of the proposal in the President's budget.

*Question 50.* How do you respond to the claim made by public power that market rate proposals are simply backdoor, discriminatory taxes, which would fall inequitably upon rural America?

Answer. PMA rates have been held low for a number of years. The proposal calls for PMAs to gradually increase their rates toward market prices in the different regions that they serve. Therefore, PMA customers would simply pay a similar price to what is being charged by other electric utilities. Because many distributors buy power from a variety of different suppliers, this proposal would result in only a small gradual increase in average customer rates for most customers, thus, we believe, having only small overall effects on the economic activity in those parts of the Nation that currently receive PMA power.

*Question 51.* As you know, the federal projects providing electricity to the PMAs are multipurpose projects. In addition to electricity then, these projects provide water for fish and wildlife, navigation, irrigation, recreation, and other uses. How will the advent of market-based rates impact these other project purposes? Proponents of public power fear that the government would hold the water it currently has the flexibility to release in order to maximize the price of power sold on the market. Please respond.

Answer. The PMAs, in coordination with the generating agencies (US Army Corps of Engineers and Bureau of Reclamation), will continue to schedule hydropower within requirements set by the generating agencies, which balance the projects' multiple purposes. For example, under normal operating conditions, the generating agencies determine project operational (water release) limits including flow targets, pool elevation targets, and minimum and maximum water release limits for various time periods based on flood control, navigation, and environmental requirements. The generating agencies may also establish "ramp" rates that govern the rate of change of the water releases or pool elevations. Within these operating requirements, the PMAs can exercise water release flexibility in order to optimize the benefits of the power generated.

Because all of the projects are operated to satisfy multiple uses, and none of the PMAs exercise sole and exclusive control over dam operations, the PMAs would have limited ability to hold water for the purpose of maximizing revenues. Any increase in price potentially may stimulate more efficient use of hydroelectric power, but may also stimulate increased usage of thermal electric generation and the related environmental consequences.

*Question 52.* According to public power advocates, many current customers find PMA power attractive because of the price only—not because it is a hydropower resource. If the PMAs were to charge market-based rates, isn't it possible that power customers may forgo purchases of PMA power, thereby undermining a reliable revenue stream for the Federal Government?

Answer. For Bonneville, Southeastern, and Western, some existing customers that own or have access to generation at prices below prevailing market levels may terminate their contracts for hydropower sold by these PMAs. Other existing customers would likely retain their hydropower contracts. I believe that hydropower priced at a market level and that becomes available as a result of contract terminations would be sold to interested existing customers, potential new customers, or into regional spot markets for energy. Generally speaking, under normal water conditions, the revenue stream should not be adversely impacted.

However, Southwestern guarantees only a limited amount of firm hydroelectric energy associated with the firm capacity that is sold to its customers because of the characteristics of the hydroelectric plants in its marketing area. Because this firm energy is limited, Southwestern's customers already must acquire firm energy from non-Federal resources to satisfy the total requirement to serve their loads. To assure that this firm energy will be available when needed, the customers may have to purchase some redundant firm capacity. As Southwestern's rates approach market levels, the apparent total cost to use Federal power will likely be above market because of the redundancy required to incorporate Federal power into each customer's power portfolio. There is the potential that Southwestern power may become unmarketable under a firm power marketing plan, which would likely result in Southwestern marketing its power on the spot market. Even selling power on the spot market, it is virtually certain that Southwestern would be able to find customers willing to purchase the energy offered for sale. However, the price obtained for that amount of power might be less than if it were sold under a firm power sales contract, which would have a negative impact on its revenue stream.

#### RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR ALEXANDER

##### FUNDING FOR THE PHYSICAL SCIENCES

*Question 1.* DOE's Office of Science is the primary federal funding source for research in physical sciences, but its budget request is down -3.8% from last year (\$3.60 B to \$3.46 B). The base R&D program is down 8% and 2000 fewer scientists and engineers will be funded by the Office of Science next year. Because our economic competitiveness depends on our ability to stay ahead of the science and technology curve, how do you foresee the U.S. staying competitive when R&D investments in the physical sciences—especially in the brainpower that drives innovation—are in decline?

Answer. The President's FY 2006 budget request will maintain U.S. scientific leadership within the current budget climate. In order to achieve that goal, difficult decisions had to be made in prioritizing research funding and facility construction and operations funding. This request will provide continued opportunities for U.S. science and scientists to remain at the cutting edge in FY 2006 and beyond. In FY 2006, the Office of Science will complete construction and commence operations on the Spallation Neutron Source, a facility that should make the U.S. a leader in materials science for more than a decade. We will complete construction and begin operations at four nanotechnology centers, and we will near completion on a fifth. We will also operate two twenty teraflop capability supercomputers at Oak Ridge and operate an upgraded capacity computing center for a broad range of science users at the National Energy Research Scientific Computing Center (NERSC) facility at Lawrence Berkeley National Laboratory. We expect to begin fabrication of components for the ITER project, the next major step on the challenging path toward eventually developing fusion as a viable energy source. We will begin construction of the Linac Coherent Light Source at the Stanford Linear Accelerator and will continue R&D on the Rare Isotope Accelerator and on the International Linear Collider.

The Office of Science is responsible for long-term, high-risk, high-payoff facilities and programs aligned with DOE missions. We support the research of approximately 23,500 graduate students, post docs, and faculty, and our facilities are used by more than 19,000 researchers each year. We are the primary source of support for physical science research in the U.S., providing 42% of federal funding. Our FY 2006 budget request, we are confident, will continue U.S. leadership in user facilities in a broad range of fields of scientific endeavor and will help improve U.S. economic competitiveness.

## ADVANCED SCIENTIFIC COMPUTING

*Question 1.* I am supportive of the United States regaining leadership high end computing. In 2004 DOE ran an open solicitation to select the team to lead this effort and I'm proud to say the Oak Ridge National Laboratory and its partners were selected and the home of the new facility is ORNL's Center for Computational Sciences. The facilities plan for the Office of Science ranks this as the #1 domestic priority, second only to the international fusion project yet the budget does not reflect a commitment to this goal

The total request for Advanced Scientific Computing Research is down \$25M dollars, funding for the Center for Computation Sciences is down \$42M but the request includes two new starts totaling about \$21M. Could you explain the reasons behind starting two new programs (for SciDAC teams) within the advanced computing budget while failing to find funds to keep high performance computing effort on track at Oak Ridge National Laboratory?

Answer. The principles behind the budget decisions are to deliver the most science for the Nation given the funds available. The Advanced Scientific Computing Research (ASCR) budget includes \$13 million for research and evaluation prototype computers and \$8 million for a new competition for Scientific Discovery through Advanced Computing (SciDAC) institutes. The research and evaluation (R&E) prototype activity has been a part of the ASCR budget for a number of years. In FY 2005 the Center for Computational Sciences (CCS) will complete the evaluations that were funded in prior years. Therefore, we will solicit proposals for new R&E prototypes in FY 2006. This type of activity was strongly endorsed in the Federal Plan for High End Computing, which was published by OSTP last May. The new competition for SciDAC institutes will increase the scientific potential of our investments in applied mathematics and computer science and respond directly to the direction in the "Department of Energy High-End Computing Revitalization Act of 2004" to establish high end computing software development centers for Leadership Class Computing.

*Question 2.* With the funding levels requested, will the U.S. still be on pace to regain and sustain international leadership for open-scientific Leadership-Class computing at the 100 Teraflop level and beyond?

Answer. The President's FY 2006 request for the Advanced Scientific Computing Research program is \$30 million over the FY 2004 President's Request and \$3 million over the FY 2005 President's Request for the same program, reflecting the priority of this effort in a fiscally constrained budget. The funding in these years positions the Department to deliver a leadership class computer for open science within this decade.

*Question 3.* According to the Federal Plan for High-End Computing issued by a Task Force consisting of all Federal agencies with a stake in high-end computing ". . . Leadership Systems are expensive, typically costing in excess of \$100 million per year to procure and Operate . . ." Given the Department's commitment to Leadership-Class computing, would you provide insights as to why the budget request is 1/4th that level (\$25 M)?

Answer. The budget of the Office of Science must balance a number of elements to deliver the best science for the nation within the current fiscal constraints. The \$25 million for the Oak Ridge National Laboratory Leadership Class Computing effort will enable researchers to operate a 20 teraflop Cray X1e and a 20 Teraflop Cray XT3 (better known as Red Storm) computer as leadership class resources for open science. These computers will be allocated through an open process to a small number of teams that are positioned to deliver new science on these platforms. This multiple machine approach was what ORNL proposed and what won the competition in FY 2004. The two systems will be the largest systems of their type available to the open scientific community in the U.S. They will provide more science than one large system because some applications, such as plasma physics and global change, perform significantly better on the X1e than on the XT3 while other applications, such as materials science and chemistry, can deliver more science per dollar on the XT3.

## EXTERNAL REGULATION OF THE SCIENCE LABS

*Question 4.* Have you had a chance to consider the House Science Committee's inquiry regarding external regulation of safety and health issues at DOE's 10 science labs? If so, what are your initial thoughts on the idea?

Answer. I plan to take a fresh look at safety, including the proposal for external regulation of the 10 DOE Science Laboratories. I firmly believe that the Department must continue to improve safety at its laboratories. The safety record of the 10 DOE Science Laboratories is very good, however, and has reflected steady improvements

over the past several years under the leadership of the Director of the Office of Science, Dr. Raymond Orbach, who has made safety his first priority. I will review the merits of external regulation of the Science Laboratories with him and other advisors, including the senior leadership of the Nuclear Regulatory Commission and the Occupational Safety and Health Administration.

#### FUSION ENERGY

*Question 5.* The funding request for Fusion Energy Sciences is up by about \$16M but that increase and more are requested for the ITER project. In order to support the request for the international ITER project, the domestic fusion research would be cut by \$34M and loss of high-tech jobs. Is it wise to cut our domestic programs considering the current delays in the ITER project?

Answer. If an agreement can be reached on the ITER site in the next few months, then it will be possible to proceed on the schedule assumed in the FY 2006 Budget, which envisions completing the preparatory work in FY 2005 and the first half of FY 2006. That would allow us to make profitable use of the funds requested for the Major Item of Equipment project that is the U.S. Contributions to ITER project. Participation in the ITER project will provide a major enhancement to our scientific capabilities, thereby strengthening the U.S. Fusion Energy Sciences program.

ITER itself will be a major fusion experiment addressing the central scientific issue of burning plasma physics. We are reorienting the domestic program and have added funds, above the FY2005 level, so that the total effort directed toward plasma science issues, including ITER, is increased. ITER is an investment in the future that will enormously strengthen the plasma physics experimental capability available to the U.S. fusion science community. We need to ensure that the U.S. fusion program continues to be on the cutting edge of fusion science, now and in the future, and this budget supports that goal.

#### Y-12 PLANT MODERNIZATION

*Question 6.* During the recent confirmation hearing, you commented on the importance of modernizing the Y-12 National Security Complex in Oak Ridge, Tennessee. Unfortunately, the President's Budget for FY 2006 significantly cuts or under funds key modernization activities. Can you provide your perspectives on this situation?

Answer. Modernization of the Y-12 Nuclear Security Complex is a major priority of the Department of Energy. Recent changes to the Design Basis Threat (DBT) have caused us to re-think our strategy for modernizing Y-12. Our plans for implementing the new strategy were insufficiently developed to justify a more detailed request. Changes to our strategy now include:

- Uranium Processing Facility (UPF): Completion date is tentatively set for 2013. Previously we had planned on modernizing the production facilities using a phased approach over a longer time line. However, the changing security environment has caused us to make significant changes to our strategy and to accelerate our previous schedule in getting authorizations for the pending construction and startup of the UPF. We are relocating all special nuclear material production into a smaller, upgraded security perimeter with enhanced defensive features.
- Highly Enriched Uranium Materials Facility (HEUMF): We are accelerating the HEUMF project within acceptable risk levels to attain completion in 2008, which will allow relocation of material into the facility in 2009.
- Weapon dismantlement activities and materials processing programs are accelerating their transformation of special nuclear material into forms and volumes suitable for moving into HEUMF.
- Security Improvements Project: Will include critical security upgrades for the interim period and critical security aspects of the final UPF-HEUMF Special Nuclear Materials Complex.

These changes are in addition to the previous baseline that included HEUMF, parts of each of the items above, the Beryllium Capabilities Project, an alternatively financed production interface complex and public interface facility, and the start up of the Purification Facility Project. The Facilities and Infrastructure Recapitalization Project (FIRP) supports this baseline and the changes above with a variety of upgrades and replacements to Y-12's infrastructure systems, including the compressed air system, a life extension to the steam plant, potable water system improvements and the electrical distribution systems.

Future projects within the Y-12 modernization program currently in the early stages of planning include Depleted Uranium/binary Consolidation, Command and Control Complex, and consolidation of special materials and general manufacturing.

We are also planning for a Decommissioning and Demolition program to stabilize and tear down aging facilities. Funding to support these projects will be requested as the plans mature sufficiently.

*Question 7.* Mr. Secretary, as you know, the June 2002 Agreement between DOE and USEC committed DOE to support the construction of a new uranium enrichment facility in Ohio using American Centrifuge technology. USEC, in turn, committed to test and manufacture centrifuges in Tennessee and deploy the American Centrifuge Plant in Ohio on a mutually agreed schedule while continuing production operations at the Paducah, Kentucky enrichment plant. I am encouraged to see that the \$3.4 billion invested by the taxpayer in centrifuge technology will finally come to fruition. Significant progress has been made by USEC in deploying the American Centrifuge technology, but a long term lease of the DOE centrifuge facilities in Ohio, and a centrifuge technology license, both of which have been under negotiation for over a year, have not been completed.

Would you commit to seek closure on the long term centrifuge lease and the technology license between DOE and USEC by the end of March of this year? This would support the deployment schedule agreed to by both parties, would help meet U.S. energy security needs and provide centrifuge-related jobs in Tennessee and Ohio.

Answer. The development and deployment of the Government's uranium enrichment technology at the DOE's Portsmouth Gaseous Diffusion Plant site in Piketon, Ohio, is the direct result of a June 2002 Agreement between the Department and United States Enrichment Corporation (USEC). In that Agreement, USEC committed to firm milestones for USEC's deployment of advanced enrichment technology in order to secure a new, more economic source of domestic uranium enrichment.

To date, USEC has met, or exceeded, its deployment milestones. The next Agreement milestone most related to the current lease and technology license negotiations is in January 2007, when USEC is to secure a financing commitment for an initial commercial plant. We appreciate that the successful conclusion of the long-term lease negotiations well in advance of that January 2007 milestone is critical to meeting the milestone, and we are confident that will be achieved.

Because our objective is to develop a mutually acceptable lease and technology license that will endure for the life of the commercial plant's Nuclear Regulatory Commission license (50+ years), careful drafting and consideration of a myriad of issues is required. The long-term lease and license negotiating teams have made substantial progress to date, but there are still a number of important issues that require resolution. It would not be prudent for DOE to commit to closure of the negotiations by the end of March. We will complete negotiations as expeditiously as possible consistent with protecting the Government's interests.

To help ensure that USEC's GCEP deployment milestones are not impaired by the pace of the GCEP long-term lease or license negotiations, DOE took several actions. In 2002, DOE authorized the contractor that manages and operates the Oak Ridge National Laboratory for the Department to enter into an expanded Cooperative Research and Development Agreement with USEC so that USEC could have access to the GCEP program scientists and technology that had previously been Government-funded so USEC could further develop the GCEP technology. Additionally, in February 2004, DOE granted USEC a temporary lease through 2009 to selected GCEP areas at Portsmouth so it could freely pursue its "Lead Cascade" activities. The Lead Cascade is already licensed by the NRC, and USEC plans to incorporate the Lead Cascade into the commercial enrichment plant when it is licensed. The Department also is actively engaged in a program to accelerate DOE's cleanup of the GCEP facilities to help accommodate USEC's deployment plans.

#### RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR BUNNING

##### CLEAN COAL

*Question 1.* The Department of Energy has proposed \$50 million for the Clean Coal Power Initiative, which starts new projects every 2 years. Many in the industry believe that almost \$300 million will be needed for the next set of projects that will start next year. The Department of Energy's Fiscal Year 06 budget falls short of that goal. Is the Department going to be able to provide adequate and full funding of the clean coal power initiative projects with this year's low funding request?

Answer. The Fiscal Year 2006 budget supports the Department's continuing effort to fulfill President Bush's 10-year, \$2 billion commitment to clean coal research, with funding for the President's Coal Research Initiative (CRI) of \$286 million, a \$13 million increase over the 2005 enacted level. The 2006 Budget brings the total

requested funding for clean coal research to \$1.6 billion over five years, on pace to exceed the President's ten-year pledge by more than 50 percent.

Within the President's Coal Research Initiative, the Clean Coal Power Initiative (CCPI) is a key component of the National Energy Policy to address the reliability and affordability of the Nation's electricity supply, particularly from its coal-based generation. The Fiscal Year 2006 Budget request includes \$68 million for CCPI, \$50 million of which is for demonstration projects and \$18 million for FutureGen, the world's first near-zero emissions coal-fueled power plant. The Department believes the FY 2006 request is adequate to maintain the overall schedule of the Clean Coal Power Initiative.

The \$50 million allocated for the cooperative, cost-shared CCPI demonstration program between government and industry will be devoted to continuing the rapid demonstration of emerging technologies in coal-based power generation, which should accelerate commercialization by the private sector.

The CCPI's FutureGen research program will establish the capability and feasibility of co-producing electricity and hydrogen from coal with essentially zero emissions, including carbon sequestration and gasification combined cycle, both integral components of the coal-fueled power plant of the future. In addition to scheduled financing of \$18 million for FutureGen in Fiscal Year 2006, the Budget also includes a commitment to FutureGen beyond 2006, by proposing \$257 million to become available in 2007 to provide the Federal share of FutureGen for several years. This sum corresponds to unexpended funds available from prior years' clean coal projects.

*Question 2a.* The DOE proposes transferring leftover Clean Coal Power Initiative funding—approximately \$257 million—to the FutureGen program and then defers using that money until next year.

If Congress provides DOE this deferral funding, what will DOE do with it in later years?

Answer. The Fiscal Year 2006 budget request for FutureGen asks for \$18 million to fund the project in Fiscal Year 2006 and for an advanced appropriation of approximately \$257 million that will be used to fund the FutureGen project in subsequent Fiscal Years. According to the initial project cost estimates presented in the table below, \$257 million will fund the FutureGen project for Fiscal Years 2007, 2008, 2009, and into 2010.

	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16- 18	Total
DOE Plant														
Funding .....	9	18	18	50	100	89	57	33	23	26	34	39	4	500
Industry Plant														
Funding .....	2	7	7	20	38	43	32	18	18	19	19	24	3	250
DOE/Industry (80 max/20 min) R&D— Sequestration						24	24	4	34	34	.....	.....	.....	120
International Contributions				5	6	8	10	10	12	12	7	7	3	80
Total .....	11	25	25	75	144	164	123	65	87	91	60	70	10	950

*Question 2b.* The DOE proposes transferring leftover Clean Coal Power Initiative funding—approximately \$257 million—to the FutureGen program and then defers using that money until next year.

Why does the DOE not take some of the leftover Clean Coal Power Initiative funding and fully fund that program instead of deferring funding for future years?

Answer. The subject \$257 million is from the earlier Clean Coal Technology (CCT) Demonstration Program, not from the Clean Coal Power Initiative (CCPI).

There are two principal reasons why DOE has not conducted another Clean Coal Technology solicitation with the funds and is now proposing to use available funds for FutureGen:

1. The funds only became available with the termination of the City of Lakeland projects in 2003 and the CPICOR project in 2004. Prior to that time, most of the CCT appropriations were committed to projects selected under the earlier CCT program solicitations. Before the Lakeland and CPICOR projects were concluded, DOE did not have sufficient uncommitted funds to conduct a meaningful solicitation. Theoretically, DOE could have attempted to prematurely terminate on-going CCT projects to free-up money for a new solicitation. But that would have been inconsistent with the long and successful history of the program and

could have been viewed as a breach by our cooperative agreement recipients and stakeholders.

2. Historically, Clean Coal Technology solicitations were directed by language contained in the Interior and Related Agencies Appropriations Act. The same is true for CCT's successor programs, the Power Plant Improvement Initiative and the Clean Coal Power Initiative. DOE did not have direction to conduct another solicitation with the funds that became available under the Clean Coal Technology program.

DOE is now asking for a reprogramming of the available Clean Coal Technology funds. We believe the best use of the funds is for FutureGen as proposed. President Bush committed to invest \$2 billion over 10 years to fund research in clean coal technologies. The scope of this initiative included the CCPI, the FutureGen initiative, and other advanced clean coal technology development efforts. All facets of this program, from long-range research to commercial-scale demonstration, advance clean-coal technologies to the point that the marketplace will use them and benefits to society will be realized. The Department feels that the 2006 Budget funding distributions within the overall clean-coal portfolio is the optimal approach at this time.

*Question 3.* Five utilities in Kentucky have decided to not renew their contracts with TVA. These companies, however, are facing not having enough transmission because TVA does not want to continue providing it to them. I have pushed hard to allow utilities who wish to get out from underneath TVA and into a competitive market environment to be able to do so. Lack of transmission may force these utilities and others to stay with TVA's higher rates because they can't afford new transmission. FERC has a pending case regarding this issue with East Kentucky Co-operative. Does FERC have any authority to help these utilities?

Answer. FERC has authority under Sections 210, 211, and 212 of the Federal Power Act to order TVA to establish interconnections and provide transmission service to parties seeking such service, provided certain criteria are met. One such criterion provides that when an electric utility, such as TVA, is prohibited from selling power outside a specific area, it cannot be ordered to provide transportation services to another entity if the electric energy to be transmitted will be consumed within the area. This means that the scope of FERC's authority with respect to the concerns of the five Kentucky utilities depends on the circumstances of the individual utility and the actions the utility wishes to take.

*Question 4.* The President's budget proposes granting FERC jurisdiction over TVA's transmission system, similar to that which FERC has over public utilities. TVA also is not subject to FERC jurisdiction for its rates, charges, and terms, and therefore, is not subject to any oversight other than by themselves and Congress. Placing TVA under FERC would require it to be subject to the same regulatory requirements as other utility companies. What do you think of FERC overseeing TVA for how it operates its transmission grid and how it charges its customers for wholesale electricity?

Answer. It is important to operate TVA's transmission system under rules that ensure nondiscriminatory access for all market participants. Therefore, the Administration proposes granting FERC jurisdiction over TVA's transmission system.

*Question 5a.* The award of the cleanup contract at the Paducah plant has been appealed which has further delayed the new contractor from taking over cleanup at the site. The delay in obtaining a new contractor and other factors may have slowed progress of cleanup at the plant.

If funding is leftover from the previous year for cleanup at the Paducah plant, what does DOE do with that money? Does DOE apply leftover funds to the next fiscal year?

Answer. Funding for the cleanup at the Paducah Plant is appropriated under the Non-Defense Environmental Services Non-Closure Environmental Activities account and the Uranium Enrichment Decontamination and Decommissioning Fund. In both of these appropriations, according to Congressional language, the funds "remain available until expended." This means that any prior year funds which are not expended during the fiscal year in which they are appropriated will be available in the future years for that particular project. However, in some years the congressionally mandated reductions direct the Department to take proportional reductions against each program, project, or activity. This means that no project or activity is exempt and therefore may not have the full "leftover" funds which were originally appropriated.

## PADUCAH CLEANUP

*Question 5b.* Do you know if Paducah will have any leftover cleanup funds from Fiscal Year 05?

Answer. At this time in FY 2005, it is premature to predict funding that could be left at the end of the fiscal year.

*Question 5c.* Is Paducah still on target to meet the accelerated cleanup deadlines?

Answer. Yes, we are on track to meet overall accelerated cleanup deadlines.

## COMMUNITY TRANSITION FUNDING

*Question 6.* The DOE has again proposed to zero out funding for the Office of Worker and Community Transition. This program has the mission of ensuring that communities can redevelop and sustain themselves following the shutdown of a DOE facility. In anticipation of the closure of the Paducah Gaseous Diffusion Plant scheduled for 2010, my constituents in Paducah have worked hard to find ways to transition their community through this difficult time. They rely on funding from the DOE to help make this happen. Last year when you zeroed out this funding, I was able to add some funds in another appropriation program for the Paducah transition. But this is not adequate and does not consider the other communities across the country who need help with their transition. What do you feel DOE's role should be in assisting community transition? What will you do to make sure that Paducah and similar communities who were previously promised DOE funding can successfully transition past the large impact of a DOE plant closing?

Answer. The community transition program was started to mitigate the economic impacts on nearby communities caused by work force reductions brought about by the end of the Cold War. The funding assisted these communities in diversifying their economies by expanding or creating new businesses in the communities. To date, the Department has provided funding of approximately \$255 million for the community reuse organizations (CROs) across the country including \$10.6 million for the Paducah Area Community Reuse Organization (PACRO). The Department has provided assistance to affected communities that has resulted in the creation or retention of over 45,000 jobs. The Department considers the mission of the community transition program to be complete.

The Office of Legacy Management (LM) which incorporated the functions of the former Office of Worker and Community Transition will continue to provide technical assistance to PACRO and other CROs; and will work with those that want to establish a personal property transfer program. A personal property program uses DOE excess property to help attract new businesses or expand existing businesses in the community.

## FREON FOR THE PADUCAH GASEOUS DIFFUSION PLANT

*Question 7.* I understand that USEC needs approximately 400,000 lbs. of Freon transferred from Portsmouth to Paducah to meet operational needs at the Paducah Gaseous Diffusion Plant. DOE has requested that the transfer not take place until various legal and policy issues can be resolved, DOE has been considering these issues since last July. Do you believe DOE will resolve this issue expeditiously?

Answer. DOE representatives have been actively engaged in discussions with United States Energy Corporation (USEC) concerning USEC's request to use, at no charge, the federal government's Freon in the DOE-owned, and USEC-operated Paducah Gaseous Diffusion Plant (GDP) in Kentucky. USEC reports that over 400,000 pounds of Freon are released into the atmosphere annually from the Paducah GDP. Consequently, USEC has an annual requirement to replace lost Freon to sustain Paducah plant operations. We expect to respond in the near future to USEC's request for the transfer of 400,000 pounds.

## POWER MARKETING ADMINISTRATION (CO-OP QUESTION)

*Question 8.* The Administration has proposed to raise the power rates for Power Marketing Administrations, including the Southeastern Power Administration (SEPA). The proposal increases the cost of electricity sold from federal dams 20% per year until the rates are at an undetermined market level. Much of this power goes to rural electric cooperatives that operate at cost and so will have to pass it on to their consumers in the form of a rate increase. Western and Eastern Kentucky counties would be affected by this rate hike. This comes just when the tax cuts are starting to help constituents. Why is the Administration essentially putting a new tax on electricity for my constituents?

Answer. The average consumer is expected to only see a slight increase in their power bill. Preliminary estimates point to a less than 2% average annual growth

rate in the total power bill for the average SEPA, SWPA and WAPA consumer over the adjustment period. PMA rates have been held low for a number of years. The proposal calls for PMAs to charge closer to the respective market prices in the different regions that they serve. Therefore, your constituents should pay no more than the rates charged by other electricity providers in the market.

RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR BINGAMAN

LOS ALAMOS NATIONAL LABORATORY

*Question 1.* When you went to Los Alamos, you stated your commitment to a new contract for the laboratory that would, in your words, "maintain—or even enhance—the scientific capabilities of the laboratory." I think that you have put your finger squarely on what should be the point of the whole exercise—to strengthen Los Alamos and its scientific capabilities. And I think you would agree with me that in a laboratory, the principal asset is the technical staff—the scientists, engineers, and technicians who produce new knowledge and apply it. Yet the latest set of changes that DOE has proposed in the contract process seems to be greatly unsettling to precisely the people who are the scientific capability of the lab. For example, even if the University of California wins the competition, it will have to create a new pension and benefits system for the laboratory, under contract guidance to reduce benefits so as to eventually be about average for other institutions deemed to be comparable to Los Alamos. For existing workers, this means that they might have to retire to lock in their benefits under the current system, including retiree health benefits. Up to 2500 employees at Los Alamos could potentially be in this retirement class, and I am informed that hundreds may already have taken the first steps in the process of retiring as a result of all the uncertainty that is hanging over the laboratory.

a. If you wanted to keep the best senior scientists now on the staff, does it make sense to present them with a decision in which they have to retire to preserve their pension and health benefits? Is it really a good idea to force the laboratory's top and senior scientists to actively consider and take steps to prepare to retire, if you really want them to stick around to work on critical national security problems?

b. You have publicly committed to us that you wouldn't reduce the benefits for existing workers at the laboratory. How does this commitment match up with the new contract guidance to reduce benefits to an average level? Again, if you want the best mid-career personnel to stay at the lab, does it make sense to greatly reduce their benefits?

c. One way to reduce costs while maintaining the level of benefits to existing workers is to have a different and reduced set of benefits for new scientists and engineers hired at the laboratory. How would you propose to attract the best and brightest to Los Alamos with merely average benefits? Or, if they are going to be in the lower tier of a two-tier benefits system? Doesn't industry make above average offers to attract above average people? Why shouldn't DOE?

Answer 1a. I am committed to ensuring that the contract competition results in an enhanced capability to perform science at LANL and meet mission requirements. In addition, I fully agree that maintaining a highly qualified staff at LANL is critical to the future success of the Laboratory. It is the Department's intent to end up with pension and health benefit plans under the new contract that are so similar to the existing plan that current employees will elect not to retire.

The most recent proposal of the SEB to require a stand-alone pension plan was precipitated by an industry perceived barrier to fair and open competition. The requirement that the offeror establish a separate corporate entity and a stand alone pension plan is similar to Sandia National Laboratories (SNL), and other Departmental National Laboratories, has proven to be a successful model for SNL and others in their ability to recruit and retain a world class workforce. Establishment of a separate corporate entity and a stand alone pension plan will also enhance the Government's ability to ensure continuity of benefits in future competitions and minimize any future employee concerns. Although a stand-alone pension plan will be required, the plan must be substantially equivalent, including current University of California Retirement Plan (UCRP) age factors and will apply to current employees that transfer to the new contract. None of the potential offerors expressed concern about this requirement during the second round of one-on-one discussions with the SEB or in their written comments to the SEB white papers.

The final Request for Proposal (RFP) will require the contractor to provide LANL employees and retired LANL employees with benefits substantially equivalent to those in effect under the current contract. In its contractually required review of the benefits package, the NNSA will utilize a panel of experts to assure that benefits

are substantially equivalent and will provide for employee input to the NNSA prior to finalizing negotiations with the contractor. In addition, employees will be offered an extended transition period to allow them time to carefully review and assess the equivalency between their existing pension and health benefit plans with the substantially equivalent new plans. It is to be expected that current employees are exploring their options with their existing pension and health benefits. I'm confident that the stand alone pension plan will (1) be very attractive to the existing workforce, (2) allow retention of the scientific and engineering workforce, (3) provide for a smooth transition to the new operator of the laboratory, and (4) provide for transportability in future contract competitions.

Answer 1b. I am still committed to protecting the benefits of existing employees at LANL and the RFP is written to do that. As described above, the new contractor must establish substantially equivalent pension and health benefits for existing employees that transfer to the contractor. Existing workers who transfer to the new contract will not be included in any benefit value study hence ensuring their benefits will continue to be substantially equivalent to what they now have. I believe that the RFP has been crafted in a manner that when employees, during the transition period, review their options they will opt to remain at LANL continuing the culture of scientific excellence we've come to expect.

Answer 1c. For new employees hired under the new contract, the Department wants the contractor to consider developing a total compensation package that is market driven and that will allow the Laboratory to recruit and retain critical scientific and engineering skills, and develop the next generation of scientific and technical talent necessary to assure that LANL continues to perform world class science. The Department considers market driven to be competitive in comparison to the Laboratory's best in class comparator companies and institutions as determined by the benefits value study. While aggregate benefits in the range of 100-105 are considered average, it is important to note that this average is based on benefits of best in class comparator companies consisting of some of our Nation's most premier companies and institutions which equates to above average to outstanding total compensation packages. In addition, the contractor is expected to develop and implement incentives that are common in industry to attract and retain critically skilled employees. DOE contractors have experience in recruiting best in class scientific and technical talent, utilizing this concept, at other National Laboratories including SNL.

Question 2. The decision that DOE will have to make about the Los Alamos contract is pretty consequential to the Department's future. I am concerned that the Source Evaluation Board that is driving this process to date is not giving a lot of evidence they understand the complex dynamics of running an institution that depends so much on a very highly educated and qualified technical workforce.

a. Would you agree that integrating that perspective into the final decision is important?

b. How might you strengthen that part of the decision-making process?

c. I believe that, as Secretary, you can be the Selection Official who makes the final call—would you consider playing that role with this contract?

Answer 2a. Yes. The Department understands the complex dynamics of managing the nation's nuclear weapons complex. The Source Selection Official will ensure that his decision reflects all of the considerations set out in the solicitation. The NNSA has staffed the SEB with highly qualified, seasoned career employees that bring extensive, diverse, and relevant experience to the SEB; they have no preconceived bias about the outcome of the competition. The SEB recognizes the key role that LANL serves in leading enhanced communication, cooperation and integration across the nuclear weapons complex. The SEB also appreciates the Laboratory's need for a highly educated and qualified technical workforce; has taken numerous steps to address the human resource issues raised by the workforce in order to retain the LANL workforce needed to support world class science and technology at the Laboratory; and, has followed recommendations of the National Academy of Sciences and other nationally recognized science organizations in developing the RFP.

Answer 2b. The SEB has created four advisory panels comprising science and technology, business, laboratory operations and security. The panel members are Federal experts well versed in their technical disciplines and in all aspects of the Laboratory's operations. For example, all of the science and technology panel members are Ph.D.s and are the responsible federal program managers accountable for most aspects of LANL's science and technology missions. Therefore, the SSO will be provided with the best information possible that has been gathered by the SEB using these experts to assist in the decision making process. I have full confidence in the SEB that Ambassador Brooks has designated to staff this procurement. Their

experience and qualifications spans the full spectrum of Laboratory mission and operations.

Answer 2c. No, I do not believe that I need to be the SSO. The Department will ensure the Source Selection Official (SSO) has the experience and integrity to ensure that appropriate perspectives are taken into account when the final decision is made.

*Question 3.* One concern that my staff has heard from managers at Los Alamos and other labs is that the NNSA is making them implement “earned value” as a major metric for fundamental research. In response to this requirement from DOE, managers at the lab are spending an inordinate amount of time trying to figure out how to force-fit the concept of “earned value” into the management of discovery-oriented work. “Earned value” would certainly be a useful way to manage a construction project—say, building a parking garage.

a. Do you think “earned value” really should be a principal metric for managing fundamental research, such as the Science or Engineering Campaigns in the Stockpile Stewardship Program?

b. Can you look into this problem and fine-tune the requirements NNSA is giving in this respect?

Answer. The National Nuclear Security Administration (NNSA) has spent the past few years improving program and project management discipline in all of its activities. The portfolio of tools includes the Planning, Programming, Budgeting and Evaluation processes, the five-year national security plan (FYNSP) budgeting discipline, and project management tools such as “earned value”. The NNSA has not required “earned value” analysis for fundamental research, although we have applied it successfully for some campaign activities. A good example is the Pit Manufacturing and Certification campaign that experienced past difficulties with predicting and maintaining schedules and costs that were needed to support stockpile deliverables. The NNSA decided to “projectize” this campaign, which has led to a baseline and improved predictability in cost and schedule. At this time, a similar project-level schedule and management approach is being developed for the Inertial Confinement Fusion campaign’s ignition activity to achieve similar benefit.

The tool may have wider application in the future. At this time, the NNSA has not required project management and earned value for campaign activities, but contractors may still choose to apply such enhanced management in order to achieve similar goals internally. We are also establishing a uniform management concept for Defense Programs work. This includes a review of all of our research and development with respect to activities that may most benefit from “enhanced management” such as earned value reporting. These efforts are all aimed at assuring the program activities are properly managed by Los Alamos.

#### OFFICE OF SCIENCE

*Question 1.* Mr. Secretary—the Office of Science is building five nanoscience centers which will be central to the United State’s [sic] effort to lead the world in nanoscience. I recently traveled to Taiwan, and they already have one center operating. They have just finished another center next to it that will be four times the size of the center being built in New Mexico. These centers are located next to the Hsinchu science park which has over 350 industries in the semiconductor and display business generating \$22 Billion in revenue. In addition, the center transfers 800 students into the Hsinchu science park annually, in addition to key scientific advances in semiconductor technology.

Do you support a similar policy of insuring that these nanoscience centers strengthen the competitive posture of key U.S. sectors such as our optoelectronics industries (in particular solid state lighting)?

Answer. The Nanoscale Science Research Centers (“nanoscience centers”) in the Office of Science have two primary goals: (1) advancing science at the nanoscale, and (2) making available to the broad scientific community state-of-the-art instrumentation and facilities in a wide range of subdisciplines encompassed by nanoscience and nanotechnology. The nanoscience centers were sited to take advantage of both the instrumentation within the centers themselves and the instrumentation of the host institution—the large x-ray, neutron, and electron-beam scattering user facilities that exist at all of the host institutions and the unique semiconductor and Micro-Electro-Mechanical Systems (MEMS) fabrication facilities at the nanoscience center at Sandia National Laboratories/Los Alamos National Laboratory. Even now, prior to the commissioning and start of operations of the nanoscience centers, their leaders are reaching out to the scientific and technology communities, including industry. It is our hope and expectation that the

nanoscience centers will play a key role in strengthening the competitive position of the U.S. in many industrial sectors including optoelectronics.

*Question 2.* Mr. Secretary, as you are all too aware, the Office of Science is the nation's largest funding source for the physical sciences. This year the program had to significantly reduce the efforts of U.S. fusion researchers to meet our commitment to participate in the International Thermonuclear Experimental Reactor or ITER program. It is my understanding that this reduction is on the order of 35 percent for the use of U.S. fusion facilities.

Do you expect this trend of increased commitment to ITER and less to U.S. facilities to continue in the out years?

Answer. The cost profile for the U.S. Contributions to ITER project, as shown in the FY 2006 Budget, certainly does increase over the next few years. As the Department develops budget proposals for FY 2007 and beyond, we will pay close attention to the balance between the research and the facility development portions of the Fusion Energy Sciences budget.

*Question 3.* Mr. Secretary—in the “Strategic Highlights” volume of your Fiscal Year 2006 budget, page 7 shows a five year estimated projection for the Office of Science. This projection has it decreasing from \$3.6 billion in this fiscal year to \$3.36 billion five years out in Fiscal Year 2010. Just to keep pace with inflation at 3 percent, the Office of Science should have a baseline budget in Fiscal year 2010 of \$4.17 billion—so that is a \$570 million difference in 2010 between budget that simply keeps pace with inflation and the one estimated in this volume.

Do you support this estimation and its steady decline in Science funding?

Answer. As noted in the Strategic Highlights, those estimates “are generated by formula and do not reflect program policy decisions.” The Administration will review and propose an appropriate level of funding for FY 2007 and beyond through its normal annual budget process.

#### EFFICIENCY—BUILDING CODES AND APPLIANCE STANDARDS

Secretary Bodman—let me ask you about Building energy codes and equipment standards. A study conducted by the Lawrence Berkeley Lab for the National Commission on Energy Policy found that upgraded building codes and appliance and equipment standards could offset 25% of the projected increase in building energy consumption projected for that time period.

Yet the budget proposes cuts ranging from 19% to 31% in DOE's codes and standards work. The appliance standards program is already woefully behind schedule in meeting the requirements of the Energy Policy Act of 1992. Standards for at least 17 appliances are overdue. Many states are now adopting their own efficiency standards; manufacturers are concerned about these multiple, conflicting standards.

*Question 1.* What do you plan to do to get this program back on track?

Answer. The delays experienced in the completion of the Department's priority efficiency standards rulemakings are of concern to me. I have directed that we accelerate those parts of the standards-setting process that are within our control. The Department takes its rulemaking responsibilities seriously, and we will work to speed up the standards setting process.

#### STATE ENERGY PROGRAM GRANTS

Another example is the State Energy Program. The states leverage the funds provided by DOE to develop programs that promote energy efficiency and renewable resources and to provide energy emergency planning. Your own budget document states that the program achieves an annual energy cost savings of \$7.23 for each \$1 of federal funds.

*Question 2.* What is the justification for cutting energy program grants to the states by over 7 percent?

Answer. The President's budget sought \$40.8 million in FY 2005 and \$41.0 million in FY 2006 for the State Energy Program. We have maintained a consistent level of funding requests.

The program was assessed using the Administration's Program Assessment Rating Tool (PART) and received a rating of Results Not Demonstrated, largely due to inability to demonstrate performance against a set of acceptable performance measures. The Department is working to develop such measures. The study estimating energy cost savings from the program, conducted by Oak Ridge National Lab, is based on extrapolations from limited data sets and includes important assumptions. The study is a useful start, but it does not meet OMB Peer Review guidelines. We are working to improve our estimate of program benefits.

I would like to bring to your attention language in the FY2005 Omnibus conference report directing USAID, in consultation with the Department of Energy and others, to develop a comprehensive strategy on reforestation in Haiti.

In May of 2004, nearly 3000 Haitians were killed in flooding caused only by moderate rains. In September, then Tropical Storm Jeanne killed nearly 5,000 more Haitians. Storms in 2003 and 1998 also claimed many Haitian lives due to flooding. There is widespread agreement that these tragedies are directly linked to deforestation and that the deforestation is directly linked to the lack of energy alternatives to fuelwood.

I specifically sought to have the language requiring USAID to consult with the Department of Energy included in the Omnibus report because I think we need some fresh thinking on alternative energy in Haiti and its critical role in any reforestation strategy. I think that this is something in which the Department of Energy should play an important role.

*Question 3.* Will you commit to devoting some resources and staff expertise to the effort to develop that important report?

Answer. We look forward to assisting the U.S. Agency for International Development (USAID) regarding the energy alternatives for the Republic of Haiti. We stand ready to provide USAID technical assistance to help devise a strategy for Haiti to use more alternative energy resources to meet its energy demand.

#### RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR AKAKA

##### U.S. RADIOLOGICAL THREAT REDUCTION

At a September 2004 hearing before this committee, the Director of the Office of Commercial Disposition Options, Office of Environmental Management, Ms. Christine Gelles, stated that DOE had located the responsibility for designating a permanent disposal facility for Greater-than-Class-C waste to Environmental Management, yet I cannot find evidence of this funding.

*Question 1.* Is there funding in the DOE FY 2006 Budget for the activities needed to identify a permanent repository for GTCC sealed nuclear sources, such as activities relating to an environmental impact statement, and for the facility itself or a contract for disposal? If so, where and how much?

Answer. DOE did not request funding in the FY 2006 Budget for the Greater-Than-Class C (GTCC) waste disposal activities because carryover funds (approximately \$1.5 million) from prior years are sufficient to fund the ongoing GTCC Environmental Impact Statement (EIS) activities through FY 2006.

*Question 2.* Can you please confirm, for the record, that the responsibility lies with Environmental Management and comment on DOE's progress and plans to identify a process and site for these wastes?

Answer. The Office of Environmental Management is responsible for completing the Greater-Than-Class-C (GTCC) Environmental Impact Statement (EIS) and determining how the Department will meet its responsibilities for disposing of GTCC waste. Current efforts are focused on performing the necessary National Environmental Policy Act (NEPA) analyses, including the development of an EIS. This spring, we expect to issue an Advance Notice of Intent, which will request comments from the public and interested agencies about the proposed EIS, the preliminary range of disposal alternatives, and the potential issues related to DOE's decisions for this category of waste. In addition, we are in the process of developing updated inventories of commercial GTCC waste and comparable DOE waste, which is essential for analyzing potential disposal options. We also have entered into discussions with the U.S. Environmental Protection Agency and the U.S. Nuclear Regulatory Commission about their potential participation in the EIS as cooperating agencies. Upon completion of the EIS, DOE will issue a Record of Decision documenting how it intends to meet its responsibilities to dispose of GTCC low-level waste. The entire EIS process usually requires 1½ to 2 years from the issuance of the formal Notice of Intent (which is expected to be issued later in 2005) to the issuance of a Record of Decision.

##### GAS HYDRATES

*Question 1.* The Natural Gas Research and Development program was rated "Ineffective" by the Program Assessment Rating Tool (PART), which was developed by the Office of Management and Budget, because it did not demonstrate clear results of research efforts. Were any individual programs in the Natural Gas Technologies area successful? If so, which ones?

Answer. The PART evaluated the Natural Gas Technologies Program as a whole. The individual components of the program were not rated separately.

*Question 2.* Given the recommendations of the bipartisan National Commission of Energy and comments within the Administration's own budget on the vast potential of gas hydrates as a source of energy, please explain why this is such a low priority in the DOE budget. Is it wise to discontinue all research in such an important area given our countries reliance on fossil fuels and the vast potential reserves that exist in the United States?

Answer. Budget discipline necessitated close scrutiny of all Government Energy programs, using strict guidelines to determine their effectiveness and compare them to other programs offering more clearly demonstrated and substantial benefits. As a result, the 2006 Budget proposes to conduct orderly termination of the program in FY 2006. This is in line with our commitment to deliver results for the American taxpayer.

Several other government agencies, specifically Minerals Management Service (MMS), U.S. Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), National Science Foundation (NSF), and Naval Research Laboratory (NRL), support gas hydrate-related research that is relevant to their missions. The *Department of Energy-Office of Fossil Energy* is designated to lead the U.S. program by the Methane Hydrate R&D Act of 2000 (2005 reauthorization introduced by Senators Akaka and Murkowski). DOE is the only U.S. agency to focus on production technology. The DOE has historically had an annual budget about \$10 million, and supports research and field studies with industry, universities and other government agencies.

The USGS develops resource estimates and conducts seismic research for arctic and marine gas hydrates. USGS is also assisting MMS and BLM in developing a resource valuation methodology. USGS annual budget is about \$1.2 million, primarily for USGS scientists' salaries.

MMS is assessing the resource and value of hydrates for existing and future Outer Continental Shelf (OCS) leases and supports University of Mississippi Center for Marine Resources and Environmental Technologies. MMS annual budget is about \$1 million for staff salaries, outside contractors and university researchers.

NOAA focuses on environmental and global climate change aspects of gas hydrate. NOAA annual budget is less than \$1 million, which funds access to NOAA and Navy submersibles and remotely operated vehicles for marine studies.

NRL focuses on geophysical technologies to detect marine hydrates and participates in multinational seismic surveys and sample collecting (Chile, New Zealand). NRL annual budget is less than \$1 million for salaries and some ship time.

NSF does not have a gas hydrate program but supports gas hydrate research that is competitively selected in other research programs such as offshore geology or geophysics. NSF also funds ship time of the Integrated Ocean Drilling Program. NSF annual spending on gas hydrates is over \$1 million.

*Question 3.* Please provide a comprehensive accounting of all the funds dedicated to climate change research across all programs, initiatives, and line items (enacted in FY 2003 and 2004; and requested in FY 2005).

Answer. The Department of Energy maintains a comprehensive accounting of all funds that contribute directly or indirectly to climate change science or technology. This accounting is done in support of the Administration's multi-agency climate change science and technology integration, planning and coordination initiatives, namely: (a) the U.S. Climate Change Science Program (CCSP), led by the Department of Commerce; and (b) the U.S. Climate Change Technology Program (CCTP), led by the Department of Energy. The Department of Energy's funding contributions to CCSP and CCTP, respectively, are shown on the two attached tables, as enacted for the Fiscal Years 2004 and 2005, and as requested for Fiscal Year 2006. Criteria for including activities in the CCTP are quite broad (see attached). In general, activities that may lead to reduced, avoided, or sequestered greenhouse gas emissions are included. Both research and deployment activities are included in CCTP.

The Office of Management and Budget submits to Congress annually a Climate Change Expenditures Report summarizing Federal spending on CCSP and CCTP. The report also includes funding for international assistance in support of climate change science, technology, or greenhouse gas reduction, as well as related tax incentives proposed in the President's Budget. This year's report is available on line at: [http://www.whitehouse.gov/omb/legislative/fy06\\_climate\\_change\\_rpt.pdf](http://www.whitehouse.gov/omb/legislative/fy06_climate_change_rpt.pdf).

ATTACHMENT NO. 1 TO QUESTION NO. 3

October 14, 2003

## CLIMATE CHANGE TECHNOLOGY PROGRAM CLASSIFICATION CRITERIA

Research, development, and deployment activities<sup>1</sup> classified as part of the Climate Change Technology Program (CCTP) must be activities funded via discretionary accounts that are relevant to providing opportunities for:

- Current and future reductions in or avoidances of emissions of greenhouse gases<sup>2</sup>;
- Greenhouse gas capture and/or long-term storage, including biological uptake and storage;
- Conversion of greenhouse gases to beneficial use in ways that avoid emissions to the atmosphere;
- Monitoring and/or measurement of GHG emissions, inventories and fluxes in a variety of settings;
- Technologies that improve or displace other GHG emitting technologies, such that the result would be reduced GHG emissions compared to technologies they displace;
- Technologies that could enable or facilitate the development, deployment and use of other GHG emissions reduction technologies;
- Technologies that alter, substitute for, or otherwise replace processes, materials, and/or feedstocks, resulting in lower net emission of GHGs;
- Technologies that mitigate the effects of climate change, enhance adaptation or resilience to climate change impacts, or potentially counterbalance the likelihood of human-induced climate change; and
- Basic research activities undertaken explicitly to address a technical barrier to progress of one of the above climate change technologies.
- Greenhouse gas emission reductions resulting from clear improvements in management practices or purchasing decisions.

Note: Programs and activities presented for consideration can include earmarks, but earmark descriptions and funding levels must be clearly called out as such in the information provided. Programs and activities funded by mandatory authorization should not be included.

Specific examples of climate change technology activities include, but are not limited to:

- Electricity production technologies and associated fuel cycles with significantly reduced, little, or no net GHG emissions;
- High-quality fuels or other high-energy density and transportable carriers of energy with significantly reduced, little, or no net GHG emissions;
- Feedstocks, resources or material inputs to economic activities, which may be produced through processes or complete resource cycles with significantly reduced, little or no net GHG emissions;
- Improved processes and infrastructure for using GHG-free fuels, power, materials and feedstocks;
- CO<sub>2</sub> capture, permanent storage (sometimes referred to as sequestration), and biological uptake;
- Technologies that reduce, control or eliminate emissions of non-CO<sub>2</sub> GHGs;
- Advances in sciences of remote sensing and other monitoring, measurement and verification technologies, including data systems and inference methods;
- Technologies that substantially reduce GHG-intensity, and therefore limit GHG emissions;

<sup>1</sup> In this context, “research, development, and deployment activities” is defined as: applied research; technology development and demonstration, including prototypes, scale-ups, and full-scale plants; technical activities in support of research objectives, including instrumentation, observation and monitoring equipment and systems; research and other activities undertaken in support of technology deployment, including research on codes and standards, safety, regulation, and on understanding factors affecting commercialization and deployment; supporting basic research addressing technical barriers to progress; activities associated with program direction; and activities such as voluntary partnerships, technical assistance/capacity building, and technology demonstration programs that directly reduce greenhouse gas emissions in the near and long term.

<sup>2</sup> Greenhouse gases (GHGs) are gases in the Earth’s atmosphere that vary in concentration and may contribute to long-term climate change. The most important GHG that arises from human activities is carbon dioxide (CO<sub>2</sub>), resulting mainly from the oxidation of carbon-containing fuels, materials or feedstocks; cement manufacture; or other chemical or industrial processes. Other GHGs include methane from landfills, mining, agricultural production, and natural gas systems; nitrous oxide (N<sub>2</sub>O) from industrial and agricultural activities; fluorine-containing halogenated substances (e.g., HFCs, PFCs); sulfur hexafluoride (SF<sub>6</sub>); and other GHGs from industrial sources. Gases falling under the purview of the Montreal Protocol are excluded from this definition of GHGs.

- Voluntary government/industry programs designed to directly reduce greenhouse gas emissions;
- Programs that result in energy efficiency improvements through grants or direct technical assistance;

## ATTACHMENT NO. 2 TO QUESTION NO. 3

## FY 2004 TO FY 2006 SUMMARY DOE BUDGET: BASIC ENERGY RESEARCH'S CONTRIBUTION TO THE CLIMATE CHANGE SCIENCE PROGRAM (CCSP), BY PROGRAM AREA

[\$ in millions]

DOE/BER program	FY 2004	FY 2005	FY 2006 request
Climate Change Prediction Program (CCPP) .....	\$28.4	\$27.2	\$27.1
Atmospheric Radiation Measurement (ARM) Program .....	\$44.3	\$44.6	\$46.3
ARM UAV Program .....	\$2.9	\$2.7	\$2.7
Atmospheric Science Program .....	\$14.4	\$12.8	\$12.6
Terrestrial Carbon Processes & Ocean Carbon Cycle Research .....	\$15.4	\$14.5	\$16.6
Ecological Processes Research .....	\$15.8	\$18.7	\$18.7
Human Interactions Research .....	\$8.1	\$8.1	\$8.1
Total .....	\$129.3	\$128.6	\$132.1

## ATTACHMENT NO. 3 TO QUESTION NO. 3

Table 4.—CLIMATE CHANGE TECHNOLOGY PROGRAM  
Program Details by Agency/Account

(Discretionary budget authority in millions of dollars)

	FY 2004 actual	FY 2005 enacted	FY 2006 proposed	\$ change 2006-05
Department of Agriculture				
Natural Resources Conservation Service—Biomass R&D, Section 9008 Farm Bill ..	14	14	12	–2
Natural Resources Conservation Service—Carbon Cycle .....	1	1	1	0
Forest Service R&D—Inventories of Carbon Biomass .....	0	1	1	0
Agricultural Research Service—Bioenergy Research .....	2	2	2	0
Cooperative State Research, Education and Extension Service—Biofuels/Biomass Research, Formula Funds, National Research Initiative <sup>1</sup> .....	5	5	7	2
Forest Service—Biofuels/Biomass, Forest and Rangeland Research .....	0	2	3	0
Rural Business Service—Renewable Energy Program .....	23	23	10	–13
Subtotal—USDA <sup>2</sup> .....	45	48	35	–13
Department of Commerce				
National Institute of Standards and Technology (NIST) Scientific and Technological Research and Services .....	10	10	7	–2
NIST—Industrial Technical Services, Advanced Technology Program <sup>3</sup> .....	18	20	0	–20
Subtotal—Commerce (NIST) <sup>2</sup> .....	28	30	7	–22
Department of Defense				
Research, Development, Test and Evaluation, Army .....	15	51	43	–8

Table 4.—CLIMATE CHANGE TECHNOLOGY PROGRAM—Continued  
Program Details by Agency/Account  
(Discretionary budget authority in millions of dollars)

	FY 2004 actual	FY 2005 enacted	FY 2006 proposed	\$ change 2006-05
Research, Development, Test and Evaluation, Navy .....	17	11	7	-4
Research, Development, Test and Evaluation, Air Force .....	1	1	0	-1
Research, Development, Test and Evaluation, Defensewide—DARPA .....	17	13	10	-3
Research, Development, Test and Evaluation, Defensewide—Office of the Secretary of Defense .....	2	0	0	0
Subtotal—DOD <sup>2</sup> .....	51	75	60	-15
Department of Energy				
Energy Conservation .....	868	868	847	-21
Energy Supply—Electricity Transmission and Distribution .....	73	103	84	-19
Energy Supply—Nuclear .....	309	394	416	22
Energy Supply—Renewables .....	352	380	354	-27
Fossil Energy R&D—Efficiency and Sequestration .....	455	388	405	17
Science—Fusion, Sequestration, and Hydrogen .....	333	371	399	28
Departmental Administration—Climate Change Technology Program Direction ..	0	0	1	1
Subtotal—DOE <sup>2</sup> .....	2,390	2,505	2,506	1
Department of the Interior				
U.S. Geological Survey—Surveys, Investigations and Research, Geology Discipline, Energy Program .....	1	2	2	0
Department of Transportation				
Office of the Secretary of Technology—Transportation, Policy, Research and Development .....	4	1	0	-1
National Highway Traffic Safety Administration .....	0	0	1	1
Research and Innovative Technology Administration—Research and Development .....	1	1	1	1
Subtotal—DOT <sup>2</sup> .....	5	1	2	1
Environmental Protection Agency				
Environmental Programs and Management .....	89	92	96	4
Science and Technology .....	22	18	18	0
Subtotal—EPA <sup>2</sup> .....	110	109	113	4
National Aeronautics and Space Administration <sup>4</sup>				
Exploration, Science & Aeronautics .....	227	208	128	-80
National Science Foundation				
Research and Related Activities .....	11	11	11	1
Total <sup>2</sup> .....	2,868	2,989	2,865	-124

<sup>1</sup>FY 2004 funding for Cooperative State Research, Education and Extension Service—Biofuels/Biomass Research, Formula Funds, National Research Initiative is an estimate and may change based upon updated information as reported in the USDA Current Research Information System (CRIS).

<sup>2</sup>Subtotals and table total may not add due to rounding. Subtotals and totals supersede numbers released with the President's 2006 Budget. Discrepancies resulted from rounding and improved estimates.

<sup>3</sup>The FY 2006 President's Budget proposes termination of NIST's Advanced Technology Program.

<sup>4</sup>Funding levels for NASA reflect full cost accounting. The decrease in NASA's CCTP number in FY 2006 is due to realignment within its Aeronautics Research areas.

#### RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR WYDEN

Secretary Bodman, at your confirmation hearing, you testified in response to my question that you would commit to meeting the existing Tri-Party agreement requirements to fully empty Hanford's leaking High-Level Nuclear Waste tanks, which have already leaked over a million gallons of nuclear waste, and are spreading contamination towards the Columbia River.

However, in releasing the Department of Energy's Budget Request for 2006, you cited legal disputes over renaming High-Level Nuclear Waste and leaving waste in the tanks as the budget justification for cutting \$267 million from Hanford clean-up funding. Despite your commitment to me to honor the Tri-Party Agreement, the Department continues to challenge requirements under Washington State law that the tanks be emptied and leaks cleaned up—which mirror the existing Tri-Party agreement.

*Question 1a.* Will the Energy Department honor the existing agreements and legal requirements to remove as much waste as possible from Hanford's leaking High-Level Nuclear Waste tanks to meet the 99% standard in the Tri-Party Agreement?

Answer. DOE remains committed to meeting all Tri-Party Agreement commitments, including these.

*Question 1b.* If you're committed to full cleanup of the High-Level Waste Tanks, why did you cite disputes over leaving waste in the tanks as a basis for cutting clean-up funds?

Answer. The Department requests funding needed to be successful in meeting its commitments, recognizing that uncertainties can limit cleanup activities. Budget requests are developed commensurate with these uncertainties. At Hanford there are legal uncertainties associated with tank closures that were brought on by Initiative 297 (I-297) in the State of Washington. I-297 and related lawsuits have introduced uncertainties in the areas of waste importation; permitting; and waste retrieval management and disposal activities at Hanford. Additionally, since the State of Washington was not included in section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, the Department is evaluating how to proceed. The FY 2006 budget request takes into account these legal uncertainties. In addition, we have completed work associated with the waste tanks, including removing pumpable liquids from the single-shell tanks at Hanford.

*Question 2.* The FY 2006 Budget Request for Hanford clean-up would cut spending by \$268 million. Don't you agree that the public should be given a chance to comment on these cuts? Will you commit to hold public hearings on the Hanford clean-up budget in Portland and Hood River as has been the practice for the past several years?

Answer. The public was able to comment on the FY 2006 President's budget at a Hanford Advisory Board (HAB) workshop held on March 9, 2005. The public will also have the opportunity to comment on the Department's budget request at a HAB workshop and public meeting on budget priorities for FY 2007 currently scheduled for March 30, 2005, in Richland, Washington, as well as at other Hanford Advisory Board meetings held throughout the year in Yakima, Richland, and Seattle, Washington, and Portland, Oregon.

#### RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR LANDRIEU

##### PETROLEUM AND GAS R&D SUBMITTAL

*Question 1.* Within DOE's Fossil Energy Budget is the request for Petroleum and Gas (Supply) R&D. Please provide an explanation of each item under petroleum and gas R&D that was funded in FY 2005—what was the project specifically funded for in FY2005—a paragraph on each item will be helpful.

Answer. The following provides the requested information.

## OIL AND NATURAL GAS FY 2005 PROJECTS

## NATURAL GAS TECHNOLOGIES

*Exploration and Production*

- *Advanced Drilling, Completion and Stimulation*

In FY 2005, Deep Trek projects for high temperature electronics, super cement, and advanced Measurement While Drilling (MWD) will complete prototype development. Research in enhanced telemetry and active drilling vibration dampeners will be completed. Benchmarking of drilling fluids and bits for extreme High Temperature-High Pressure (HT-HP) environments will be completed. *Participants include: NETL, APS Technologies, MASI Technologies, Honeywell, Schlumberger, E-Spectrum, Novatek, Mauer, Cementing Solutions, Terra Tek, GTI, TBD.*

- *Advanced Diagnostics and Imaging Systems*

In FY 2005, conduct work on projects selected in the Advanced Diagnostics and Imaging area, which investigate improved methods of imaging deep gas targets to improve industries success rate of finding new gas. A geologic play book for the Trenton-play in the Appalachian basin will be completed and work on resource assessments of deep plays in Alabama will be conducted. *Participants include: 3DGeo, Paulsson Geophysical, WVU Research Corp, RSI, Technology Intl., U. Alabama, U. Texas (BEG), TBD.*

- *Multi National Laboratory/Industry Partnership*

In FY 2005, funding will conduct work on projects focused on advanced drilling, and MWD and Logging while Drilling (LWD) tools.

- *Stripper Well Revitalization*

In FY 2005, DOE will conduct work on the National Stripper Well Consortium involving industry and the research community to investigate multiple technologies to improve stripper well production to prevent abandonment. In addition, DOE will support industry-led efforts in technology transfer through workshops and publications focused on the small- to mid-sized independents. *Participants: Penn St. University.*

- *Technology Transfer*

In FY 2005, funding will conduct work on industry led efforts in technology transfer. *Participants included: Petroleum Technology Transfer Council (PTTC).*

- *Deep Trek*

In FY 2005, conduct research on developing critical high temperature electronic components and an advanced high temperature MWD system needed by industry to drill and complete deep gas wells. *Participants included: Honeywell, Schlumberger.*

- *Liquefied Natural Gas*

In FY 2005, DOE will conduct analyses of the economic impact of LNG supplies in the U.S. market and specific safety and security issues related to the delivery of LNG to terminals in the U.S. A federal task force will be established to streamline the LNG terminal approval process. *Participants include: Conversion Gas Imports, GTI/University of Arkansas, New York State Electric and Gas, DOT/OPS, Coast Guard, MMS, FERC TBD.*

- *Arctic Research*

In FY 2005, conduct work through the Arctic Energy Office supporting natural gas development in Alaska.

*Gas Hydrates*

In FY 2005, the program will conduct work on its assessment of gas hydrates to analyze seafloor stability and safety issues and the potential resource in the Gulf of Mexico through an ongoing joint industry project to collect deep stratigraphic cores from hydrate formations as well as continue the development of instrumented arrays for future deployment in the Gulf of Mexico. Characterization well sites will be prioritized in Alaska to assess the hydrate resource. Scientists at NETL and other national labs will conduct work on hydrate characterization. *Participants include: Chevron Texaco, U. Mississippi, BP, U. Alaska, USGS, MMS, NOAA, NSF, NETL, National Labs.*

### Infrastructure

- *Storage Technology*

In FY 2005, DOE will conduct work on an industry-led consortium in gas storage and conduct work on developing an advanced method for developing cavernous storage in carbonate formations. *Participants: Penn State University and Clemson University.*

- *Delivery Reliability*

In FY 2005, conduct research on ensuring the reliability and integrity of the gas transmission and distribution network, developing smart automated inside pipeline inspection sensor systems, obstacle detection systems for horizontal boring applications for laying distribution pipelines, developing systems capable of detecting external force damage, developing technology to improve the efficiency for reciprocating and turbo compressors, and developing advance technology capable of determining pipeline wall integrity. *Participants included SwRI, Tuboscope, NYGAS, GTI, Battelle, CSU, ARC, ANL, INEEL, LLNL, SNL, ORNL, PNNL, NETL.*

### Effective Environmental Protection

- *Environmental Science*

In FY 2005, conduct work on targeted initiatives to define and solve specific problems in key focus areas, specifically: 1) environmental barriers to coal bed methane production, and 2) air quality issues affecting natural gas production. Develop objective, credible data for regulatory decisions as part of a program-wide environmental strategy for maintaining sustainable supplies of natural gas. *Participants include: NETL, National Labs, TBD.*

## OIL AND NATURAL GAS FY 2005 PROJECTS

### OIL TECHNOLOGY

#### Exploration and Production

The program focuses on development of technologies to economically recover the oil remaining in mature fields by expanding the technology options for enhanced oil recovery. In FY 2006, the program will orderly terminate all Oil Technology activities.

- *EOR/CO<sub>2</sub> Injection*

In FY 2005, conduct work on short and long term efforts to enhance utilization of industrial CO<sub>2</sub>. The strategy is to increase the adoption of 'best practices' to opportunities existing in the near-term. Specifically, basin-wide strategies will be examined to identify ways to lower cost and accelerate infrastructure development to cost effectively deliver CO<sub>2</sub> from industrial sites to candidate oil fields; this effort includes resolving potential permitting and regulatory issues. *Participants include LBNL, LANL, NETL, TBD.*

- *Diversity of Global Oil Supply*

In FY 2005, conduct work on diversification of international sources of oil supplies through bilateral activities with nations that are expanding their oil industry, including Norway, Canada, Mexico, and others. Bilateral and multi-lateral work will include technology exchanges and joint research, development and demonstration under the Administration's North American Initiative and other international agreements. *Participants to be determined.*

- *Advanced Drilling, Completion and Stimulation*

In FY 2005 conduct work on upgrades to the Advanced Cuttings Transport Facility that allow high-temperature/high-pressure experimentation on energized fluids (air, mist, gas assisted, foam, etc.) and synthetic drill fluids, cements, and transport of fluids in horizontal and inclined wellbores. *Participants included: Northrop Grumman, University of Tulsa, DEA, APS Technology, Impact Technologies, National Labs, NETL.*

- *Advanced Diagnostics and Imaging Systems*

In FY 2005, conduct work on development of advanced reservoir diagnostics and imaging systems to optimize oil discovery and recovery. Develop quantitative engineering parameters that control rock-fluid interactions which impact oil production. Complete work on fundamental geoscience efforts focusing on geoscience/engineering reservoir characterization on naturally fractured reservoirs. *Participants included: Cal Tech, Northrop Grumman, Univ of Houston, Univ of Kansas, CSM, Stanford*

Univ, Univ of TX @ Austin, Mich Tech, Univ of Illinois, MT BOM, NMIMT, Western Michigan Univ, Adv Resources, Wm Marsh Rice Univ, NETL.

- *Multi-National Laboratory/Industry Partnership and National Laboratory Supporting Research*

In FY 2005, conduct work on the transfer of technologies that advance understanding of the characteristics and producibility from oil reservoirs. *Participants included: National Labs.*

- *Reservoir Efficiency Processes*

In FY 2005, conduct work on development of improved gas flooding recovery methods and advanced the state-of-the-art in reservoir simulation. *Participants included: NETL, Northrop Grumman, NMIMT, Univ of TX, Cal Tech, Univ of OK, Univ of Kansas, Univ of TX @ Austin, Stanford Univ, Correlations Company, Adv Resources Intl, Univ of Utah, Univ of Pitts, Univ of Houston, Univ of Oklahoma, TBD.*

- *Arctic Research*

In FY 2005, conduct research on the oxygen transport membrane being conducted at the University of Alaska, Fairbanks. Complete research in oil-related projects through the Office of Arctic Energy including tundra travel model for the North Slope of Alaska, characterization and alteration of wettability states of Alaskan reservoirs, and physical, biological and chemical implications of mid-winter pumping of tundra ponds. *Participants included UAF, AK Dept. Natural Resources, TBD.*

- *Russia Technology Program*

In FY 2005, conduct work on the Russian Cooperative Research Program including one or more of the following technology focus areas: USGS-Russian Offshore Arctic Resource Assessment; World Bank Global Gas Flaring Initiative; Arctic Construction and Operations Technology Transfer Initiative; "Full Value Chain" Oil Spill Restoration; Prevention, and Response Program; and/or, U.S.-Russia Commercial Energy Summit Education Initiative. *Participants: TBD.*

*Reservoir Life Extension/Management*

- *Domestic Resource Conservation*

In FY 2005, conduct work on the following elements: 1) Key technology prototype development, such as micro-hole technologies, for enabling improved access and minimizing environmental impact; 2) Technology transfer with special emphasis on independents; and 3) Policy analysis and planning to prioritize program efforts and provide policy evaluations to maximize impact on domestic oil recovery over a wide range of technological and economic conditions. *Participants include PTTC, Northrop Grumman, CDO, Univ of Kansas, Penn State, NETL and TBD.*

*Effective Environmental Protection*

The Effective Environmental Protection focuses on technologies and practices that reduce the environmental impact of oil exploration, production, and processing while minimizing the cost of effective environmental protection and compliance. The program supports energy security by helping to overcome the environmental barriers that limit access to domestic resources. The program also supports the President's Clear Skies Initiative by reducing emissions from oil production and processing. In addition, the program supports the recommendations of the National Energy Policy by encouraging additional recovery from existing wells, providing technology to allow additional oil development on Federal lands and providing answers to environmental questions that are limiting oil exploration and production in the National Petroleum Reserve—Alaska. Activities have provided a complete examination of specific impact of produced water and the more general problem of water management. A detailed roadmap of the necessary actions has been presented in a public workshop for discussion and inclusion of stakeholder views. The overall objective has been to help balance the need to develop the Nation's energy resources while maintaining our environmental values. This program has filled critical information and technical gaps that are needed to meet the Nation's energy needs without sacrificing environmental quality.

- *Environmental Science*

In FY 2005, conduct work on targeted activities to define and solve specific problems in key areas, specifically: 1) management of produced water and technology development that makes produced water a resource for beneficial uses; and 2) ensuring maximum sustainable access to oil resources on Federal lands. *Participants in-*

clude: *KS State Univ, Northrop Grumman, TX-EES, Univ of N Carolina, Univ of TX at Austin, IOGCC, GWPC, CSM, CDO, NETL, LBNL, LLNL TBD.*

*Question 2.* Do you support the President's view for the modernization of America's transmission grid and the critical role to be played by superconductive transmission cables in this effort as outlined in the National Electric Delivery Technologies Roadmap report released last year.

Answer. Yes. Last year we launched a superconductive cable that should result in first-of-a-kind cables being installed by electric utilities in Columbus, OH, Albany, NY, and Long Island, NY. Each project will demonstrate the advantages offered by high capacity superconducting cables (3 times or more than that of conventional cables) in improving power flows and optimizing grid operations. Each cable is planned to be operated on the grid in 2006—but each have different designs addresses the formidable challenge of providing more power through the same right-of-way meeting customer's growing demands for more electricity. And, Columbus cable demonstrates the most compact 3-phase cable in the world. The Albany cable is the first cable in the world to be tested using an improved type of superconducting wire being developed in the program. These cables offer strategic benefits to utilities and a potentially cost-effective means for repowering existing electric delivery infrastructure.

#### RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR CANTWELL

*Question 1.* Your electric transmission and distribution budget cuts budgets nearly 20% from the budget. These cuts compromise important initiatives underway with including projects underway in the Pacific Northwest with the Pacific Northwest National Laboratory. I strongly support these programs including GridWise and GridWorks programs and seek your support.

Can you explain the cuts and justify how we can cut funding for these important programs given the necessity to ensure a reliable transmission system?

Answer. The OEEA FY 2006 budget request of \$95.6 million is a 19 percent reduction to the FY 2005 enacted level. However, the FY 2005 enacted level includes \$51 million in congressionally-directed activities. When the FY 2005 level is adjusted for this, the FY 2006 request reflects a slight increase.

If we compare the President's FY 2005 request to the FY 2006 request, the total amount requested for GridWorks and GridWise is the same. This reflects the Administration's continued commitment to these programs, and their potential contribution to the reliability of the electric grid.

*Question 2.* As you may know, I sponsored legislation in the last Congress to support the Genomes to Life program at the Department of Energy. I strongly support an expanded program and development of research centers to support this goal. Last year, the Office of Science released a Twenty-Year Facility Outlook that included four Genomes to Life centers. The FY05 Energy and Water Development appropriation includes \$10M to begin preliminary design of the first facility.

Does this budget keep us on track to meet the 20-year strategy, including the four GTL centers and what specific progress will be accomplished in FY '06?

Answer. Yes, this budget does keep us on track to meet the strategy for the 4 GTL centers described in the Twenty Year Facility Outlook. In FY 2006 we will continue fundamental research that will underpin technologies central to the first GTL facility and will complete the majority of the project engineering and design work. We have also received an application from the National Academies to review the Genomics: GTL program, including plans for the 4 facilities, and hope to have at least an interim review completed in FY 2005 or early FY 2006.

*Question 3.* The Environmental Molecular Laboratory at the Pacific Northwest National Laboratory opened its doors seven years ago and has experienced sustained growth in user participation. Today, over 2100 scientists from the U.S. and around the world utilize EMSL's extraordinary capabilities. However, flat funding creates difficult challenges when investments need to be made in order to keep the instrumentation refreshed, bring on line new capabilities, and serve the user community.

EMSL is the flagship user facility for the Office of Biological and Environmental Research. Can you provide specific explanation for cutting the Biological and Environmental Research portion of the PNNL's budget?

Answer. I agree that the EMSL facility provides extraordinary capabilities for scientists around the world, and the flat funding provided for EMSL while other activities are reduced is a strong indicator of my support for this facility even within tight budgets. The Biological and Environmental Research Advisory Committee will conduct a thorough review of EMSL, for both science and user facility infrastructure in June. This review will help DOE and PNNL management set future priorities

and resource allocations for the EMSL. Also, while the budget request for PNNL has been reduced by \$2,205,000 from just over \$84,319,000, I anticipate that PNNL will continue to compete successfully for new, merit-reviewed funding opportunities in FY 2006 as it has in the past.

DOE procurement decisions are being challenged and overturned.

*Question 4.* What actions are you taking to improve the quality, fairness, timeliness, and success of the DOE procurement process, specifically for River Corridor and FFTF?

Answer. The Secretary has ordered a review of the procurement process. This review is currently being conducted. We would be happy to meet with you after the review is completed and the Secretary has made his determination.

#### SMALL BUSINESS DOE PROCUREMENTS

Another major concern on the part of many of my constituents is whether DOE is implementing the President's directive to increase government procurements with small business.

*Question 5.* What are you doing to improve and expand DOE procurements that benefit small businesses, particularly those based in the local communities most affected by contamination and which will suffer severe economic impacts when cleanup is done if local, sustainable businesses are not developed?

Answer. We believe that the most-effective way to foster sustainable small business entities is to give them the opportunity to participate as prime contractors in providing critical mission-related services. To date, DOE is in the process or has completed five small business competitive procurements for site cleanup. In addition, DOE has awarded 22 small business contracts for decontamination, deconstruction and removal and remediation services as part of its Indefinite Delivery/Indefinite Quantity (IDIQ) contracting approach. The total value of all these contracts will be in excess of \$1 billion.

In contracts not set aside for small business firms, DOE has taken steps to increase small business participation in the cleanup program. For example, selection of cleanup contractors at larger sites is based, in part, on the extent to which small businesses participate in performance of the contract work scope. The request for proposal to clean up a large site requires the submission of a Small Business Subcontracting Plan that includes a minimum goal of 30 percent for small business subcontracting of the total contract value.

Also, cleanup contractors at DOE sites have entered into Mentor-Protégé relationships with small businesses in the local community to develop and expand their capabilities and groom them to participate in future contract awards. Scheduled meetings are held locally to provide a forum for small business firms to learn more about the Department's contracting opportunities. In addition, Federal and site contractor Small Business Program Managers are available to counsel small business firms on an on-going basis.

#### SMALL BUSINESS CONTRACTING

*Question 6.* Will you support efforts to expedite evaluations of procurement involving local small businesses-particularly since extended delays are especially harmful to small companies that don't have the resources to keep teams mobilized?

Answer. Yes. I fully support the use of approaches that expedite the competitive procurement process, consistent with Government-wide procurement and small business policies. Accordingly, I will ensure that such approaches are employed to the maximum extent practicable in Department of Energy procurements. To this end, I have tasked the Department's Chief Acquisition Officer to review procurement actions reserved for small business participation to identify needed improvements in the process and promptly implement remedial actions.

#### RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR CORZINE

*Question 1.* Secretary Bodman, as I mentioned before, I am the only Senator on this committee from a state affected by the 2003 blackout. More than one million New Jerseyans lost power as a result of a power surge more than five hundred miles away. All in all, 50 million northeasterners were left in the dark.

It quickly became clear that many sections of our national transmission infrastructure had not been keeping pace with the nation's increased demand for electricity. President Bush called the blackout a "wake-up call" to modernize the electric grid. In the weeks that followed, everyone agreed that we needed increased development and deployment of new transmission technology.

That is why I was shocked to learn that the President's budget cuts the Office of Electric Transmission and Distribution by nearly twenty percent. This is not just a minor belt tightening, this is an enormous reduction in our nation's ability to prevent another blackout.

Every major research account within the office of Electric Transmission and Distribution has been cut: transmission reliability R&D has been cut by 41%, and the account responsible for transforming the power grid into a reliable, adaptive power network has been cut by 25%. Furthermore, superconductivity research has been cut by nearly 20% and energy storage R&D has been cut by almost 25%.

Secretary Bodman, considering the security, economic and public health impact of a catastrophic failure of the grid, what do you believe the role of the federal government should be in electricity reliability research and development?

Answer. The FY 2006 budget request of \$95.6 million is a 19 percent reduction to the FY 2005 enacted level for OEEA programs. However, the FY 2005 enacted level includes \$51 million in congressionally-directed activities. When the FY 2005 enacted level is adjusted for this, the FY 2006 request reflects a slight increase. and development.

The Department created the Office of Electric Transmission and Distribution to lead the effort to modernize the Nation's grid. Since 2003, we have devoted roughly \$180 million to developing more reliable and efficient grid technologies, including High Temperature Superconductivity to make transmission more efficient, a real-time Wide Area Monitoring System for the Nation's Eastern Interconnect to make the grid more reliable, end-use demand response capabilities to relieve peak loading and reduce costs, and advanced energy storage technologies to make the grid more adaptable to demand. Two new activities have been developed that promise to better integrate advancing power technologies. First, GridWise develops real time controls, advanced communications and information software technologies for electric distribution and end use. Secondly, GridWorks develops advanced hardware technologies, including cables and conductors, substation and protective systems, power electronics, and sensors.

#### OFFICE OF SCIENCE CUTS

*Question 2.* Secretary Bodman, as you are well aware, New Jersey is one of the nation's leading states in high-tech research. Princeton University and Rutgers University in particular, have been large beneficiaries of the Office of Science's laboratories and funding. The Princeton Plasma Physics Laboratory, one of our nation's leaders in developing fusion-based energy, continues to make breakthroughs with funding from the Office of Science.

Over the past twenty years, funding for government research and development increased rapidly. Life sciences research at the National Institutes of Health has increased five-fold, and defense research at the Office of Science has declined in constant dollars.

Secretary Bodman, can you explain what priority you place on physical sciences research? Do you agree that federal support for research in other science should continue to significantly outpace support for the physical sciences?

Answer. We are all proud of the excellent work that has been done at the NIH to improve the health of all Americans and keep the U.S. pharmaceutical industry and our national healthcare system at the forefront of world medicine. That said, the Department of Energy's Office of Science also plays a key role in the biological sciences. We are the founder of, and an important participant in the sequencing of the human genome, and we also perform research at the nexus of physics and biology.

The Office of Science is equally committed to support of research in many areas of the physical sciences. In the area of fusion energy research, for example, we expect to begin fabrication of components for the ITER project in FY 2006, which we hope will be the penultimate step to clean, economical and abundant fusion energy. Princeton Plasma Physics Lab will manage the U.S. contribution to ITER as well as continuing research on alternative concepts for fusion energy and on fusion theory.

The Office of Science supports the fundamental science that provides the foundation for our nation's technological progress and economic competitiveness. Hence, we must always carefully balance the allocation of resources, especially in times of fiscal restraint. The Office of Science is responsible for long-term, high-risk, high-pay-off facilities and programs aligned with DOE missions that maintain U.S. scientific leadership. We support the research of approximately 23,500 graduate students, post docs, and faculty. Our facilities are used by more than 19,000 researchers each year. We are the primary source of support for physical science research in the U.S.,

providing 42% of federal funding. Our FY 2006 budget request, we are confident, will continue U.S. leadership in scientific user facilities in a broad range of fields of scientific endeavor, including the physical sciences.

#### YUCCA MOUNTAIN TRANSPORTATION

*Question 3.* Secretary Bodman, although I have expressed reservations about the particular Yucca Mountain site, I do agree with you that the government must responsibly move forward on a national repository for spent nuclear fuel. Leaving the spent fuel at existing generator sites is simply not a sustainable solution.

As you may know, I have been concerned with improving the security of our nation's railroad infrastructure. Transporting this waste from on-site spent fuel pools at Oyster Creek, Salem and Indian Point will likely require the radioactive material to travel on rail lines through 11 of New Jersey's counties, and through the heart of two of its cities—Camden and Trenton. I am also pleased to learn that the Department's 16 percent increase in Yucca Mountain funding includes a renewed focus on nuclear waste transportation projects.

In addition to the new rail cars and the Nevada rail line, will the Department be carrying out infrastructure improvements or inspections on existing rail lines that would be responsible for the transportation of nuclear waste? Do you believe that the rail lines on which this nuclear waste will travel merit extra scrutiny or inspections? If so, what should the Department of Energy's role be in ensuring the security of the nation's nuclear waste transportation infrastructure?

Answer. Ensuring the safe and secure transportation of spent nuclear fuel from utility sites to the Yucca Mountain repository is one of the highest priorities of the Department's current activities. While we are focusing our efforts on the development of the Nevada Rail line and the acquisition of rail cars and transportation casks, we are also working closely with other Federal agencies to ensure that the national rail infrastructure will provide for the safe and secure transportation of these materials. Under current law, the Federal Railroad Administration is responsible for the safety and security of the rail infrastructure, rail equipment, rail operations and personnel. It is my understanding that the Federal Railroad Administration will continue to develop and enforce the requirements for rail line inspections, security personnel qualifications and training, and equipment design and inspection that will ensure the safe transport of spent nuclear fuel as well as the nearly two million railway tank car shipments of hazardous substances that occur each year.

#### RESPONSES OF SECRETARY BODMAN TO QUESTIONS FROM SENATOR SALAZAR

##### ECONOMIC MODELS FOR RENEWABLE ENERGY

*Question 1a.* Mr. Secretary, as I mentioned in my opening statement, I am very concerned about the economic models used by DOE to determine the costs and benefits of renewable energy and increased energy efficiency. Your estimates are based on numbers that do not hold up to inspection. For example, your model has oil prices at about \$35 per barrel for the year 2005, even though actual prices are more than \$50 per barrel. The projected costs of renewable energy would compare much more favorably than current estimates allow if a credible model for oil and natural gas prices were used in the baseline assumptions.

Could you please explain the discrepancy between the inputs to your economic models and actual prices for oil and gas?

Answer. All energy markets are subject to considerable uncertainty and short-term, random perturbations that are difficult to predict. In recognition of this fact, the Energy Information Administration (EIA) publishes alternative projection scenarios to provide insight into a wider range of external market conditions, such as the uncertainties of world oil markets, than can be accounted for in the reference case projections. Alternative scenarios are also published that center around natural gas and renewable energy resource and technology cost uncertainties.

The High Oil Price scenario included in the *Annual Energy Outlook 2005* (AEO2005), for example, projects sustained oil prices at levels substantially higher than could be expected based on historical trends. Such cases indicate that, while high oil prices do tend to increase the use of cellulosic ethanol as an additive to gasoline (although this remains a relatively small contributor to automotive fuel supply), they have little impact on the bulk of renewable energy markets in the electric power sector, where oil is a minor fuel. In the Restricted Natural Gas Supply scenario included in the AEO2005, natural gas prices by 2025 are 30 percent higher than the reference case. Such conditions do result in somewhat more renewable electric generation, but other technologies, such as coal or even more efficient gas utili-

zation, are also able to compensate for the higher prices, and can generally do so more cost-effectively than renewable resources.

The oil price used in the National Energy Modeling System (NEMS) and reported in the AEO is the annual average U.S. refiner acquisition cost of imported crude (IRAC) oil, not the West Texas Intermediate (WTI) futures market benchmark price. The IRAC price is typically \$5 per barrel less than the WTI price that is frequently cited in the press as the current oil price. Recently, the spread between IRAC and WTI has exceeded \$8 per barrel. Due to data preparation, model simulations, and analysis that are prerequisites to publishing the AEO, data inputs and other exogenous assumptions are finalized in September. The price published in the September *Short Term Energy Outlook* (STEO) is the basis for the 2005 oil price used in the AEO reference case. Because of the volatility in crude oil prices during Fall 2004, EIA also developed two alternative world oil price scenarios, with a 2005 oil price of \$43.63 per barrel, which is much closer to recent WTI prices, when combined with the \$5 per barrel IRAC-to-WTI differential. As for natural gas, the 2005 price used in the NEMS model is the average wellhead price as reported in the September STEO. The gas price typically cited in the press is the Henry Hub price, which on average is 50 to 60 cents per million Btu (MMBtu) above the average wellhead price. Under the two higher alternative world oil price scenarios, natural gas prices in 2005 are higher by another 25 cents per MMBtu, and thus, when combined, the resulting natural gas price is much closer to recently quoted prices appearing in the media.

*Question 1b.* Along these same lines, I am also wondering about your price forecast for wind energy over the next 15 to 20 years. My understanding is that the Department of Energy does not account for reductions in wind energy prices over time. Why not? Do you agree that with greater demand for capital equipment, wind energy prices should improve over time?

Answer. Wind energy cost projections prepared by the EIA do account for reductions in wind energy costs as a direct function of growth in installed capacity. Consistent with observed market trends of the past 5 to 10 years, reductions in the capital cost of wind power plants are assumed to be consistent with capital cost reductions in other mature electric power technologies, and decline at a rate of 1 percent for every doubling of installed capacity. Reduction in the overall cost of energy from wind power plants is mostly achieved in the EIA forecast, as it has been in recent market trends, through significant improvement in plant performance as measured by the annual capacity factor for new installations. Because wind energy is a highly capital-intensive technology, prevailing interest rates (which are not specifically correlated with wind capacity growth, but tend to increase over the projection period) also have a significant influence in the overall cost of energy, and may tend to mitigate forecast declines in the technology cost of wind. Because of the inherent uncertainties in such projections, EIA publishes an alternative scenario that assumes renewable energy technology costs decline an additional 10 percent from reference case projections by 2025.

Although, as noted, wind *technology* costs do improve as a function of increased installations ("learning-by-doing" or experience curve effects), the cost of exploiting the wind resource can reasonably be expected to increase as the best sites are utilized, leaving increasingly less desirable locations available for new development (a "supply curve" effect). There are a number of factors specifically modeled by EIA to account for depletion of prime, low-cost wind resource areas, including: prevailing local wind speed, distance from existing local transmission lines, adequacy of the long-distance transmission grid, remoteness from infrastructure (such as heavy construction equipment, skilled workers, major roads, and properly rated bridges and underpasses), locally rough or difficult terrain, and decreasing contribution to reliable grid operations. Also, increases in demand for any capital good that occur in a very short time span can cause supply-chain bottlenecks and result in temporarily inflated installation costs. These "short-term supply elasticity" effects have been reported within the wind industry as they periodically respond to the expiration of key Federal subsidies, and are also accounted for in EIA modeling of wind and other electric power technologies.

*Question 1c.* I would like you to have the EIA recalculate the projected costs for a 10 percent and a 20 percent renewable portfolio standard using a realistic model—one that incorporates an oil price floor of \$40 per barrel in today's dollars. I would also like to see these calculations take into account a reasonable improvement in wind prices over time. I imagine this analysis will take little more than reprogramming the projected costs of oil and wind power and rerunning the calculation. Mr. Secretary, will you provide me with the results of that analysis in the near future?

Answer. As noted above, EIA did publish an alternative scenario in the *Annual Energy Outlook 2005* which assumed historically unprecedented long-term sustained

oil prices measured in terms of the average U.S. refiner acquisition cost of imported crude (IRAC) of near \$40 per barrel in today's dollars, but oil prices were not found to be an important factor in renewable penetration. Also, as noted above, wind cost declines used in the AEO2005 are based on a strong body of U.S. and international market data from the past 10 years, during which time period about three quarters of the total U.S. installed wind capacity has been brought online.

The *AEO2005* does include two sensitivity cases that evaluate the impact of key factors affecting the contribution from new wind plants. In the High Renewables case, renewable energy technology costs are assumed to decrease to a level 10 percent lower than achieved in the reference case by 2025. For wind, this results from both modest capital cost declines as well as significant additional performance improvement. Although this cost reduction results in a 25 percent increase in installed wind capacity by 2025 relative to the reference case, wind remains a minor contributor to overall electricity supplies in the U.S.

In the Production Tax Credit (PTC) extension case, the PTC for wind and other renewable electricity resources is assumed to be extended for an additional 10 years beyond the current December 31, 2005, expiration. In this case, plants entering service through 2015 are eligible to receive the 1.8 cent per kilowatt-hour, inflation-adjusted credit for the first 10 years of plant operation. As a result, total installed wind capacity grows to 63 gigawatts by 2015. Although wind capacity does not grow between 2015 and 2025, by 2025, wind capacity is over five times greater than in the reference case and represents 3.7 percent of total generation. While significant wind technology cost declines (basic installation cost reductions and performance improvements) do occur during the exceptional PTC-induced growth in the wind industry, these are generally out-paced by increases in wind resource costs as the lowest-cost resources are already exploited. This higher-cost wind must also now compete against lower cost alternatives, as the PTC-induced wind has already displaced some more expensive generation alternatives and suppressed some of the growth in the price of natural gas, a key electric generation fuel.

*Question 2.* Regarding renewable energy research, in the president's 2006 budget, funding for biomass research and development has been cut by more than 18% (\$16.8 million). I believe this is a poor choice. Biomass offers significant potential as a future energy supply, both as a source of alternative fuels and as a source of electric power generation. America's goal of energy independence can not be achieved without investment in these technologies. For example, affordable cellulosic ethanol might be achieved in the next few years with proper research investment. This in turn would lead to a more robust economy, less dependence of foreign oil, and significant reductions in greenhouse gases.

Given all of these achievable benefits, why has the biomass program been cut so significantly? Are the technical challenges to reducing the costs of cellulosic ethanol still a priority for DOE?

Answer. We are seeking a healthy biomass R&D budget of \$72.2 million. While this is down from last year's appropriation of \$88.1 million, we believe this as an appropriate level of funding to achieve our performance targets, and in fact represents a significant increase when Congressionally-directed projects are excluded from the FY 2005 enacted level.

The Department maintains a robust program to overcome technical challenges and lower the cost of cellulosic ethanol. If we can bring down the cost of ethanol derived from materials such as agricultural and other waste products, the amount of ethanol we could produce nationally could increase dramatically.

#### OIL AND GAS RESEARCH AND DEVELOPMENT

*Question 3.* The President's budget request eliminates all research and development (R&D) activities related to oil and gas exploration and production. DOE's oil and gas programs were funded by Congress in the current fiscal year at a combined total of \$78.7 million. Under the President's proposed budget for DOE, these programs will only receive \$20 million for program close-out. The termination of all technology support for the domestic oil and gas industry is a mistake. The prime beneficiaries of that R&D would have been independent domestic petroleum producers. These producers make up the majority of the industry operating onshore in the United States, producers who are too small to afford to conduct the kind of R&D that would help them to increase the productivity of their oil and gas operations. They rely heavily on the DOE program and on organizations such as the Petroleum Technology Transfer Council, that are supported by DOE. How does closing out such a program square with fostering American energy independence?

Answer. The President's National Energy Policy (NEP) lays out a number of suggestions that will help to ensure that economic investments in needed resource de-

velopment occur in a timely manner leading to an improvement in the world's access to oil and gas resources. Some of these are in the Energy Bill, whose passage is a high priority of the Administration. Others are administrative actions that are being pursued by the Department of the Interior, the U.S. Forest Service, and other agencies.

Budget discipline necessitated close scrutiny of all Fossil Energy programs, using strict guidelines to determine their effectiveness and compare them to other programs offering more clearly demonstrated and substantial benefits. As a result, the 2006 Budget proposes to conduct orderly termination of the program. It was determined that the industry has the capacity to pursue this research, especially in light of the current strong economic performance of the industry. The Energy Information Administration (EIA) reports that the 28 U.S. major energy companies spent \$370 million on oil and gas recovery research and development in 2003, the latest available data. This represents a 39% decline in five years (1998 spending was \$606 million). An analysis of industry R&D spending (1997-2000), reported by the Interstate Oil and Gas Compact Commission, showed that the oil and gas service industry spent \$631 million per year on technology. An analysis of EIA's 2000 data found that about 24% of research expenditures were for basic and applied research; the remaining funds product development and technical services.

